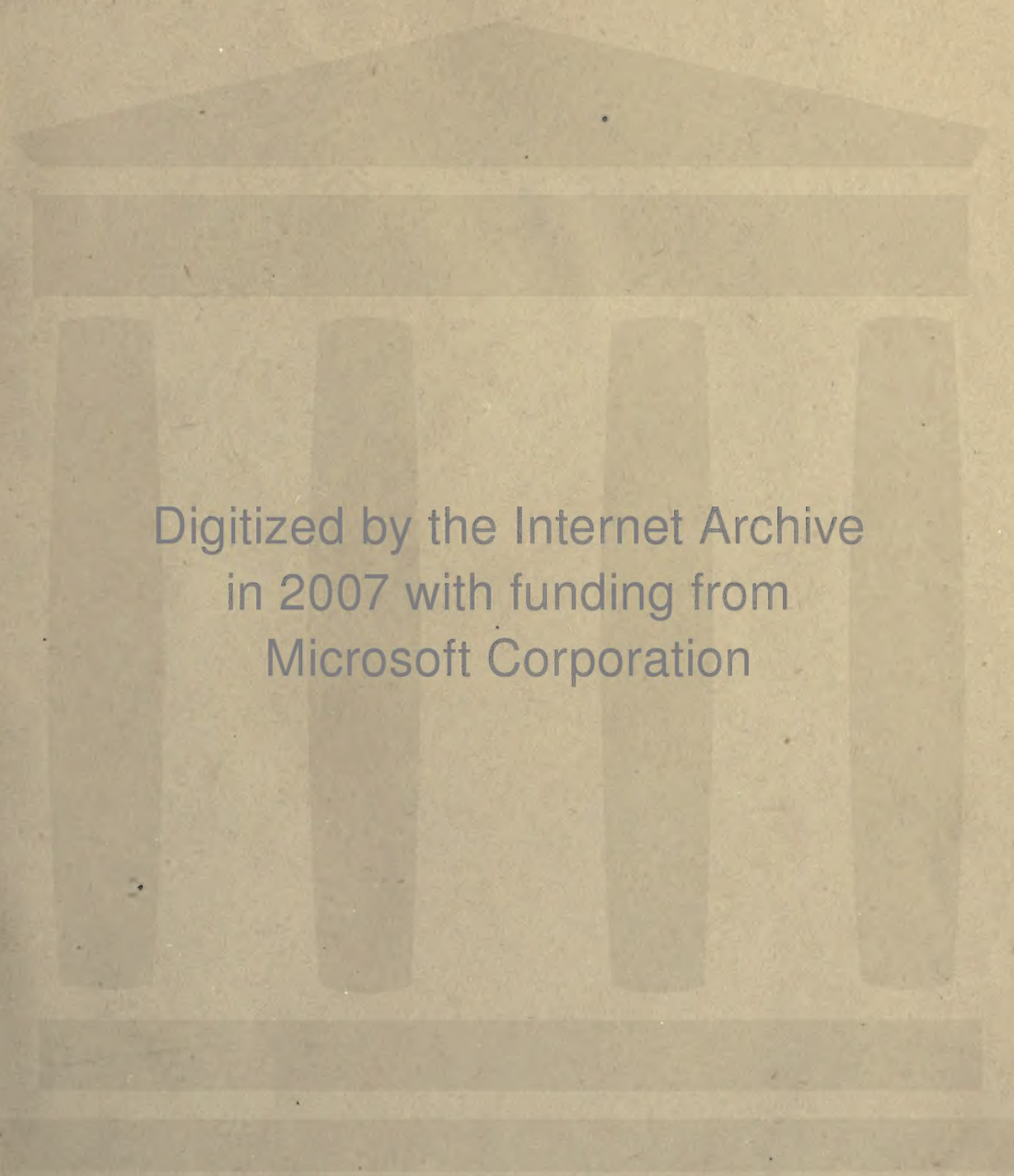




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REPORT
OF
The Tariff Commission

Vol. I.
THE IRON AND STEEL TRADES,
WITH APPENDIX.

97613
13/8/09

London:

PUBLISHED FOR THE TARIFF COMMISSION, 7, VICTORIA STREET, S.W.,

BY

P. S. KING & SON,

Orchard House, 2 & 4, Great Smith Street, Westminster, S.W.

Printed by VACHER & SONS, Westminster House, Great Smith Street, Westminster, S.W.



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Westminster House, 5 & 6, Great Smith Street, Westminster, S.W.

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A complete Index to this Report is in course of preparation, and will be supplied gratis to purchasers of this volume who make written application to the Secretary, The Tariff Commission, 7, Victoria Street, S.W.

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Secretary: Mr. W. A. S. HEWINS.

Assistant Secretary: Mr. PERCY A. HURD.

REPORT.

SECTION I.—INTRODUCTION.

Mr. CHAMBERLAIN having requested us to examine the fiscal proposals which he has submitted to the country ; and to report as to :—

- 2** (A) Their probable effect on present conditions ; **Objects of the Commission.**
- (B) Whether any modifications are desirable, and, if so, what should be the nature of such modifications, having due regard to the general interests of the community ;
- (C) The best way in which, where there are conflicting interests, those interests can be harmonised ;
- (D) What duties, if any, should be recommended ;
- 3** we think it desirable to publish at once the results of our inquiry into the Iron and Steel industry. Although, in making this report on Iron and Steel, we have had before us sufficient evidence, relating to other industries, to justify the provisional conclusions we have reached ; our final recommendations must necessarily be delayed until we have completed our inquiry into all the trades—including agriculture—which may be directly or indirectly affected. **Publication of Iron and Steel Report.**
- 4** Before we could carry out the objects for which the Commission had been constituted, it was necessary to obtain a complete and impartial description of the conditions of which we had to take account in estimating the probable effect of Mr. Chamberlain's proposals. This involved the organisation of some means of securing expert advice on industries, or branches of industries, not directly represented on the Commission. The means we adopted were (i.) the appointment of a General Purposes Committee " to prepare the business for each meeting, to settle the records of transactions, and generally to carry out the decisions and directions of the Commission subject to the Rules of Procedure " ; and (ii.) the constitution, from time to time, of special trade committees, by adding to the General Purposes Committee members of the trade or trades under examination who were not members of the Commission. The members of the special committees so constituted are kept in touch with the work of the Commission by the presence of the members of the General Purposes Committee, and attend the meetings of the Commission when the trades they represent are being considered. With the advice of these committees, we proceeded to obtain information from the following sources :— **Procedure and Method of Inquiry.**
- 5** British and Foreign Official Returns, Books, Documents, Journals and Reports.—Although the official returns issued by the British Government are, in many respects, incomplete ; yet these returns, the reports of foreign Governments, and the scientific books of all countries, contain an immense amount of information. For the purposes of our inquiry into the Iron and Steel trades memoranda have been prepared on the following and other subjects :— **Official Returns, &c**
- (i.) Comparative statistics of the Iron and Steel Trades of Great Britain and foreign countries (Appendix).
- (ii.) The organisation and working of the German Kartells (Appendix).

- (iii.) Recent developments in the United States Iron and Steel Industry (Appendix).
- (iv.) The evidence given before the United States Industrial Commission (Appendix)
- (v.) Foreign and Colonial Tariffs (Appendix).
- (vi.) The operation of the German Iron Duties.
- (vii.) Drawbacks and Rebates in operation in foreign countries.
- (viii.) Railway Rates and Railway Policy.

5 *contd.*

The information contained in these memoranda is either embodied in the report, or, so far as is practicable, printed in the Appendix. Scientific and trade journals and periodicals have also been made use of, and their contents classified so far as they bear directly on the subject of our inquiry.

Forms of Inquiry.

Returns made in response to Forms of Inquiry.—We attach the greatest importance to the Forms of Inquiry we have issued, inviting manufacturers and others to assist the Commission by furnishing particulars of their trade. Those relating to the Iron and Steel industry† were:—

6

Form No. 1 (issued to all Manufacturers).

Form No. 2 (issued to Merchants).

Form No. 4 (issued to Iron and Steel Manufacturers only).

The questions were framed with the view of eliciting information which would supplement that obtainable from official returns and thus provide a basis for the examination of representative witnesses. The replies to Inquiry Form No. 1 determined all the subsequent stages of our investigation, the generous response of manufacturers having enabled us to measure the importance of the various conditions we had to consider with a precision which would have been impossible without their active co-operation. The significance of the replies to these Inquiry Forms will be seen from the analysis which follows.

Replies to Form 1.

Replies to Inquiry Form No. 1, relating to Iron and Steel, were received from manufacturers in all the branches of the industry specified in the classification adopted for the purpose of this report given in the Appendix, and from all the following districts:—

7

England and Wales—

Districts.

Tyne and Wear District.
 Cleveland.
 Cumberland and Lancashire.
 South and South-West Yorkshire.
 Derby and Nottingham.
 Leicester, Lincoln and Northampton.
 Staffordshire.
 South Wales and Monmouth.

8

Scotland.

Classification of Industry.

It will be seen that this report covers the Iron and Steel trades proper; we shall deal with Engineering, Machinery, Shipbuilding and the Hardware, Hollowware and Cutlery trades in subsequent reports.

9

† These Forms are printed in the Appendix.

From Iron and Steel manufacturers we received 458 returns representing 230,986 persons, giving an average of 504 employees per firm. We have some difficulty in stating numerically the exact importance of these figures. The census returns are useless for this purpose, because they separate the various classes of labourers, not according to the main industry in which they are employed, but according to the class of labour on which they are engaged, such as pattern making, bricklaying, calcining, etc., and we have no means of determining how many workmen so classified are employed in Iron and Steel works. The last census (1901) further distinguished employers from employed. But the replies received to Form No. 1 represent "firms," not "employers," of whom there may be several in each case. The census figures again relate to "occupations," whereas the answers we received relate to the numbers actually "in employment." A much more satisfactory comparison is to be obtained from the last return of the Inspector of Factories, issued by the Home Office (Cd. 841, 1901). These returns do apply to the actual number of employees in the various firms in 1901, and so far as they relate to the Iron and Steel trade may be summarized as follows :—

Total Number of Employees.

Industry.	No. of Factories or Departments.	Total No. of persons employed.
Iron smelting (such as blast furnaces)	128	26,006
Iron and Steel founding	2,153	102,826
Iron and Steel mills	572	135,853
Total	2,853	264,685

The first vertical column in this return is again useless for purposes of comparison, because every department, or branch works, is separately counted, while we have received, generally speaking, replies from head offices aggregating the answers for branches which are in many cases numerous. The second column supplies a more accurate standard for comparison. The total number of persons employed is given for 1901 as nearly 265,000, while the number employed by the firms answering the inquiries of the Commission is 230,986, or 87·2 per cent. of the whole; or, allowing for possible overlapping, we may say that the replies to Inquiry Form No. 1, relating to the Iron and Steel trades, represent firms employing more than 80 per cent. of the total number of persons employed in those trades.

The following table shows the character of the trade in which the Iron and Steel firms replying to Form No. 1 are engaged :—

Market.	No. of responding firms.	No. of employees of these firms.
Home, foreign and colonial	218	188,928
Home and foreign	35	9,397
Home and colonial	36	8,456
Foreign and colonial	1	230
Home	163	23,148
Unspecified	5	827
Total	458	230,986

Many of the firms now engaged exclusively in the home trade state that they formerly exported, but cannot now do so. The number of responding firms at present engaged in an export trade in addition to their home trade is 289, employing 206,781 persons, or 89·5 per cent. of the total number of employees covered by the replies.

Size of Firms.

The following table shows still further the character of the firms from whom replies have been received :— 12

No. of workpeople.		No. of firms.		No. of employees. of these firms.
1-20	..	42	..	483
21-30	..	29	..	753
31-40	..	20	..	725
41-50	..	16	..	747
51-100	..	74	..	5,523
101-200	..	98	..	14,674
201-500	..	70	..	20,933
501-1,000	..	38	..	26,452
1,000 and upwards	..	45	..	160,696
Number not stated	..	26	..	—
Total		458	..	230,986

Thus 80 per cent. of the responding firms, comprising 99 per cent. of all the employees of these firms, have more than 50 employees per firm.

Replies to Forms 2 and 4.

The replies to Form No. 4 are in almost every case from representative firms and not only supplement the replies to Form No. 1, but contain confidential figures as to output, sales, wages, &c., which have been of the greatest value to us in estimating the present condition of the Iron and Steel Trade. The information derived from merchants has enabled us to solve many difficulties, which arise in connection with the changes which have taken place in the character and direction of the export trade. 13

As the replies to the Forms were received and tabulated, the general character of the evidence and the points on which it would be necessary to supplement it became clear. Memoranda on the relation between the different branches of the inquiry and summaries of the evidence already received were prepared and arrangements made for completing our investigations.

Special Reports, &c.

In a large number of cases, the firms replying to our inquiries have voluntarily offered confidential information as to cost of production, conditions of competition and other subjects. They have also answered supplementary questions arising from their replies to the Forms, and have collected information, which they have placed at our disposal. We invited the co-operation of Trade Associations of every kind and some of them, notably the English Section of the British Tube Association, and the Forgemasters' Association (now the Forgemasters and Steel Founders' Association of Great Britain), assisted our inquiry by the preparation of elaborate tables and reports. (Appendix.) 14

Witnesses.

The examination of Witnesses was deferred until the first tabulation of the replies to Form No. 1 had been completed. We were then in a position to determine the points upon which additional information was required. We invited representative firms and individuals, irrespective of their views on fiscal reform, to come before us and give evidence on— 15

(1) Points arising out of the replies given by the firms represented by the witnesses to Forms No. 1 (General Manufacturers' Form) and No. 4 (Iron and Steel Trades Form).

(2) Special points not included in the Forms of Inquiry relating to the particular branches of the Iron and Steel Trades which witnesses represented.

(3) Questions selected from the Draft Questions for Iron and Steel Witnesses Generally (Appendix).

(4) Points arising out of the Memoranda on the Iron and Steel Trades issued by us.

(5) Any additional points upon which Witnesses desired to give information.

16

The following Witnesses were examined :—

**Witnesses
Examined**

Colonel CHARLES ALLEN (Chairman of Sir Henry Bessemer & Co., Ltd., Sheffield; Vice-President, Sheffield and Hallamshire Bank; Managing Director of the Ebbw Vale Steel, Iron and Coal Co., Ltd.).

Mr. ALBERT E. BARTON (Manager of the Carnforth Hematite Iron Co., Carnforth).

BRITISH TUBE ASSOCIATION (English Section) :—

Mr. A. W. HUTTON (John Russell & Co., Ltd., Alma Tube Works, Walsall).

Mr. ROWLAND W. LEWIS (Edwin Lewis & Sons, Patent Iron Tube Works, Wolverhampton).

Mr. T. HARRIS SPENCER (John Spencer, Ltd., Globe Tube and Engineering Works, Wednesbury).

Mr. S. W. CARLTON (The Monmouthshire Steel and Tin Plate Co., Ltd., Pontymister Works, Newport, Mon.).

Mr. THOMAS DAVIE (Chairman of the Waverley Iron and Steel Co., Ltd., Coatbridge).

Mr. W. H. DAVIES (Shelton Iron, Steel and Coal Co., Ltd., Stoke-on-Trent).

Mr. GRAHAM FORRESTER (Sole Agent for the Welsh Anthracite Collieries Co., Ltd.; the Garn Mill Anthracite Colliery Co., Ltd., Swansea).

Mr. ERNEST GEARING (Leeds Forge Company).

Mr. F. W. GILBERTSON (F. W. Gilbertson & Co., Ltd.; Pontardawe Steel, Tinplate Galvanising Works and Director of the Glynbendy Tinplate Co., Ltd., South Wales).

Sir ALFRED HICKMAN, Bart., M.P. (Chairman of Alfred Hickman, Ltd., Iron and Coal Masters; Ex-President of the British Iron Trade Association).

Mr. J. STEPHEN JEANS (Secretary of the British Iron Trade Association).

Mr. C. W. KAYSER (Kayser, Ellison & Co., Sheffield, Crucible Steel Manufacturers).

Mr. ANDREW K. McCOSH (Managing Director of William Baird & Co., Ltd., Iron Manufacturers and Colliery Owners, Scotland).

Mr. JOHN STRAIN (Chairman of the Lanarkshire Steel Co., Ltd.; Member of the Council of the Institution of Civil Engineers; Director of the Commercial Bank of Scotland).

Mr. W. WANKLYN (The Monmouthshire Steel and Tinplate Co., Ltd., of Pontymister Works, Newport, Mon.).

Sir THOMAS WRIGHTSON, M.P. (Director of the North Eastern Steel Co., Middlesbro').

Members of other important firms have also been good enough to send in written evidence.

SECTION II.—RELATIVE POSITION OF THE BRITISH AND FOREIGN IRON AND STEEL TRADES.

Pig Iron Output.

In order to show clearly the relative position of the British and Foreign Iron and Steel Trades, we give a series of tables based upon British and foreign official returns. The standards of comparison adopted, viz., the annual production and consumption of Pig Iron and Steel, are universally considered to be satisfactory tests of the prosperity of the industry. For convenience, the quantities have been reduced to a common measure of tons of 2,240 lbs.

17

Table 1.

TABLE I.—Average Annual Production of Pig Iron in Principal Countries (in thousand tons).

18

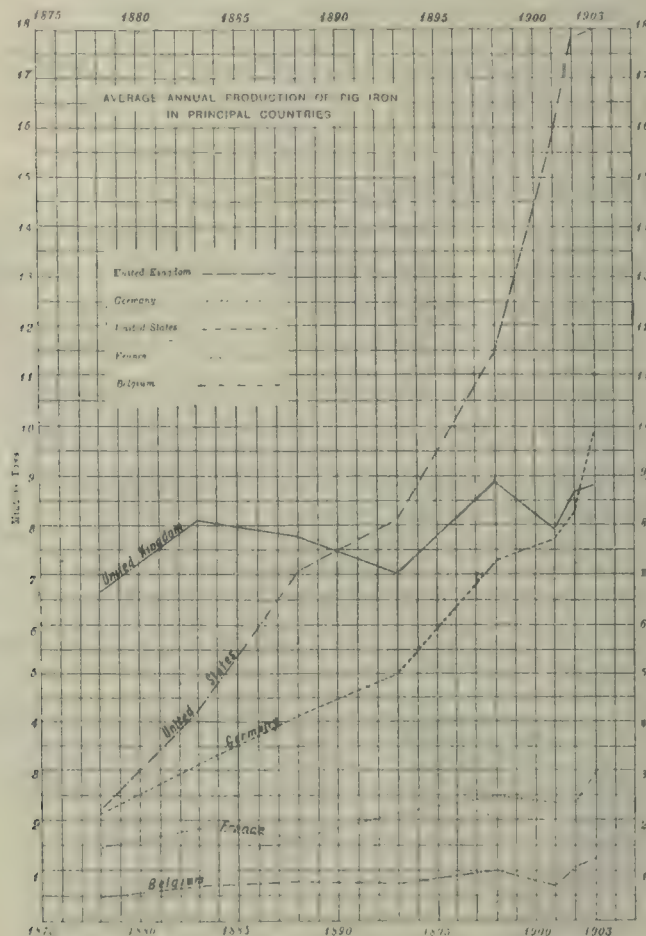
Period.	U. Kingdom.	Germany.	United States.	France.	Belgium.	All Countries.
1876-80 ..	6,660	2,140	2,200	1,450	490	14,810
1881-85 ..	8,100	3,340	4,260	1,860	700	20,100
1886-90 ..	7,760	4,130	7,080	1,660	770	23,640
1891-95 ..	7,040	4,990	8,130	2,170	750	26,210
1896-1900 ..	8,890	7,310	11,490	2,480	1,010	35,590
1901 ..	7,930	7,740	15,880	2,350	760	40,230
1902 ..	8,680	8,260	17,820	2,390	1,080	43,840
1903 ..	8,810	9,860	18,000	2,780	1,220	47,340

In the following diagram the above figures are re-stated in graphic form. The curves begin in the middle year of the first period (1876-80) :—

FIG. 1.—Average Annual Production of Pig Iron. (See Table 1.)

19

Fig. 1.



In the next Table (2) the same figures are re-stated as percentages of the total production of all countries in each of the same periods.

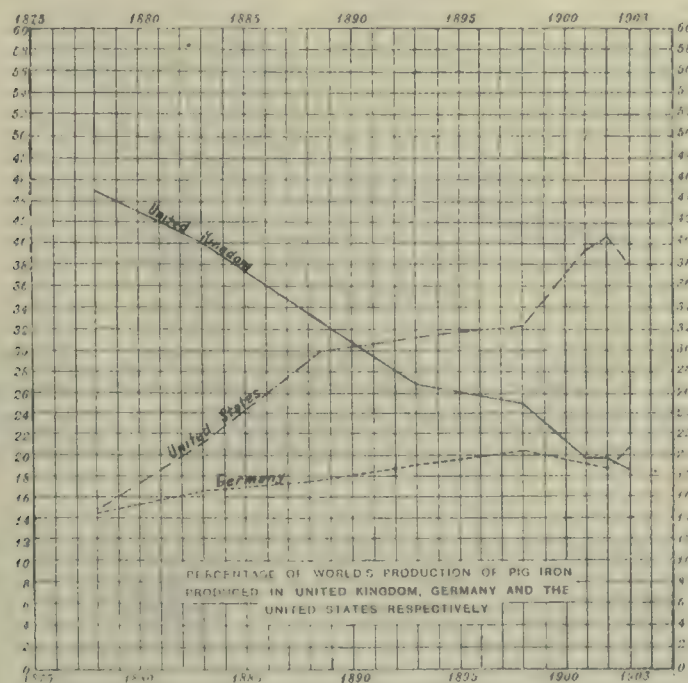
Comparative output
of Pig Iron in
different Countries

TABLE 2.—Production of Pig Iron in Principal Countries expressed as percentages of Total Production.

Table 2.

Period.	United Kingdom.	Germany.	United States.	France.	Belgium.
1876-80	45.0	14.5	14.9	9.8	3.3
1881-85	40.3	16.6	21.2	9.3	3.5
1886-90	32.8	17.5	29.9	7.0	3.3
1891-95	26.9	19.0	31.2	8.3	2.9
1896-1900	25.0	20.5	32.3	7.0	2.8
1901	19.7	19.2	39.5	5.8	1.9
1902	19.8	18.8	40.7	5.5	2.5
1903	18.6	20.8	38.0	5.9	2.6

FIG. 2.—Production of Pig Iron in Principal Countries expressed as percentages of Total Production of Pig Iron. (See Table 2.)



In the next Table (3) the growth of pig iron production in the principal countries of the World is exhibited. In each case the average production in the period 1876-80 is assumed to be 100.

Growth of output
of Pig Iron in
different Countries

Table 3.

TABLE 3.—Growth of Production of Pig Iron in Principal Countries.

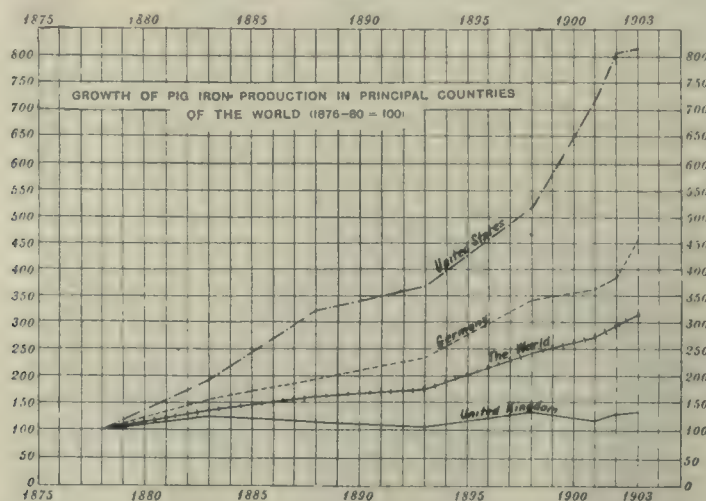
23

Period.	United Kingdom.	Germany.	United States.	France.	Belgium.	All Countries.
1876-80 ..	100	100	100	100	100	100
1881-85 ..	121	156	193	128	142	135
1886-90 ..	116	193	322	114	157	159
1891-95 ..	105	233	370	149	153	177
1896-1900 ..	133	341	522	171	206	240
1901 ..	119	361	722	162	155	271
1902 ..	130	386	810	164	220	296
1903 ..	134	460	818	192	245	319

Fig. 3.

FIG. 3.—Growth of Production of Pig Iron. (See Table 3.)

24



Consumption of Pig Iron.

In Table 4 the average amount of pig iron annually consumed in British works is further shown. This figure is obtained by adding or subtracting, as the case may require, the difference between the exports and imports of pig and puddled iron to the total production, as given in Table I. It is practicable to give these figures for the United Kingdom, Germany and United States only.

25

Table 4.

TABLE 4.—Average Annual Consumption of Pig Iron (in thousand tons):—

26

Period.	United Kingdom.	Germany.	United States.
1876-80	5,430	2,210	2,200
1881-85	6,690	3,330	4,430
1886-90	6,700	4,180	6,300
1891-95	6,270	5,010	8,320
1896-1900	7,880	7,650	10,490
1901	7,290	8,320	15,860
1902	7,840	8,190	18,420
1903	7,880	9,640	18,580

27

In Table 5, the consumption of pig iron in each of the above countries is given per head **Per capita consumption.** of the population. We thus allow for the different rates of growth of the population in the countries concerned. In Table 6, the growth of pig iron consumption, which generally is regarded as an index of the condition of the iron and steel industry in any country, is further given, assuming in each case the value 100 for the consumption per head of the population in the first period.

28

TABLE 5.—Average Annual Consumption of Pig Iron *per head of the population* (in lbs.) :— **Table 5.**

Period.	United Kingdom.	Germany.	United States.
1876-80	361	114	101
1881-85	422	164	184
1886-90	406	197	235
1891-95	365	220	281
1896-1900	437	316	322
1901	392	327	457
1902	410	318	522
1903	412	367	517

29

TABLE 6.—Growth of *per capita* Consumption of Pig Iron :—**Table 6.**

Period.	United Kingdom.	Germany.	United States.
1876-80	100	100	100
1881-85	117	143	182
1886-90	112	173	233
1891-95	101	193	279
1896-1900	121	277	319
1901	109	287	452
1902	114	279	521
1903	114	322	511

30

In the above tables no allowance has been made for stocks at works and elsewhere. **Stocks of Pig Iron** There are no official figures of the stocks at works, and the following table is compiled from the annual estimates made by Messrs. W. Fallows & Co., Liverpool.

31

TABLE 7.—Average Estimated Stocks of Pig Iron in United Kingdom on 31st December each year :— **Table 7.**

Period.	Thousand Tons.
1880-1884	1,569
1885-1889	2,432
1890-1894	1,094
1895-1899	1,050
1900-1903	512

In the following Table 8, the production of pig iron in the United Kingdom is analysed into the principal districts.

Table 8.

TABLE 8.—Production of Pig Iron in Principal Districts of the United Kingdom during the last 17 years :—

(Compiled from "Mineral Statistics," issued annually by Home Office.)

District.	Quantities (in thousand tons.)					Percentage of Total Production.				
	1886-90.	1891-95.	1896-1900.	1901.	1902.	1886-90.	1891-95.	1896-1900.	1901.	1902.
Scotland	902	826	1,126	1,113	1,295	12	12	13	14	15
Durham and Northumber- land	780	799	1,037	958	948	10	11	12	12	11
Cleveland	1,862	1,838	2,128	1,855	1,914	24	25	24	24	23
Cumberland and Lanca- shire	1,586	1,284	1,572	1,386	1,470	20	18	18	18	17
Wales, Monmouth, Wilt- shire, Worcestershire and Shropshire ..	1,016	865	931	750	859	13	11	10	9	10
Lincoln, Northampton, Derby, Notts and Leicester	892	910	1,177	1,011	1,178	11	13	13	13	14
Stafford	542	506	589	529	593	7	7	7	7	7
Yorkshire, W. and S. Ridings	197	213	292	247	259	3	3	3	3	3
	7,777	7,241	8,852	7,849	8,516	100	100	100	100	100

The above tables establish the following conclusions :—

(1) At the end of the seventies, the total amount of pig iron produced in the United Kingdom was nearly $6\frac{3}{4}$ million tons, that is, as much as the total production of the five iron-producing countries next in importance, and no less than 45 per cent. of the total production of the world.

(2) At the end of the eighties, the total amount of pig iron produced in all countries had increased by 59 per cent., but that of the United Kingdom by only 17 per cent. Germany and the United States, on the other hand, had increased their production by 93 per cent. and 175 per cent. respectively.

(3) Early in the nineties, the United Kingdom lost the pre-eminence it had enjoyed for more than 100 years, and the United States took the first place. Since then, the United Kingdom has been overtaken by Germany and has now fallen to the third place, while the total production of the United States is only just less than that of the United Kingdom and Germany taken together.

(4) In the United Kingdom, the production of pig iron has just kept pace with the increase of population. In Germany and the United States, the increase in production has been continuous and much more rapid than the increase of population. Of the six periods of years under review, three show a diminution of production as compared with the immediately pre-

ceding period in the case of the United Kingdom, while in the case of the United States and Germany each period has marked a considerable advance on the preceding period.

(5) If we turn to the consumption of pig iron, we find that the United Kingdom is now third among the iron-consuming countries.

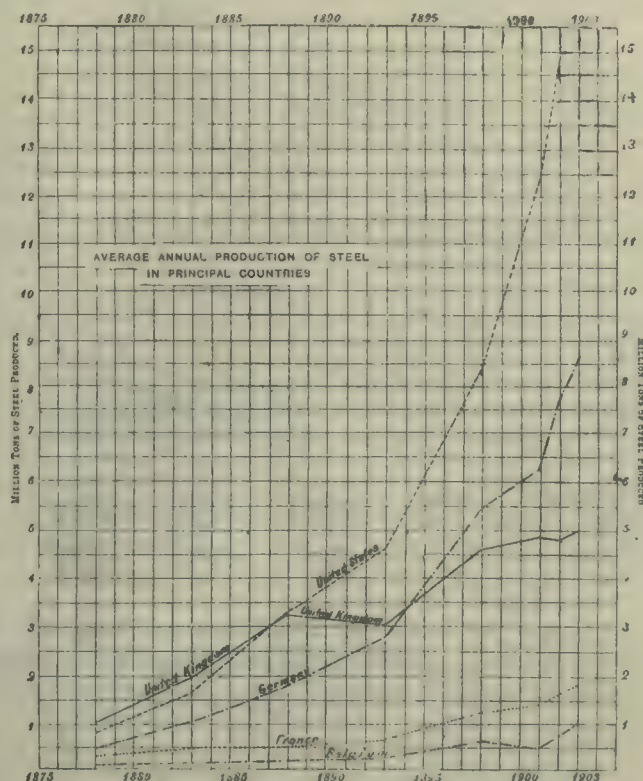
(6) Thus, whatever test we apply, we find that the pig iron industry of the United Kingdom is almost stationary, and all the principal districts of the United Kingdom where it is carried on are alike affected.

We proceed now to consider the case of Steel, and apply standards of comparison similar to **Steel output**. those we have applied to Pig Iron.

34 TABLE 9.—Average Annual Production of Steel in the Principal Countries during the last **Table 9.** 27 years (in thousand tons).

Period.	United Kingdom.	United States.	Germany.	France.	Belgium.	All Countries.
1876-80 ..	1,020	810	510	290	120	3,060
1881-85 ..	1,970	1,650	1,070	480	170	5,880
1886-90 ..	3,270	3,290	1,790	510	220	10,030
1891-95 ..	3,080	4,670	2,780	700	320	13,070
1896-1900 ..	4,660	8,450	5,520	1,260	630	23,250
1901 ..	4,900	13,470	6,290	1,410	520	30,530
1902 ..	4,850	14,940	7,650	1,610	760	35,890
1903 ..	5,030	?	8,700	1,820	?	?

35 FIG. 4.—Average Annual Production of Steel in the Principal Countries (1876-1903). (See Table 9.) **Fig. 4.**



In the following table the above figures are expressed as percentages of the total production of the world.

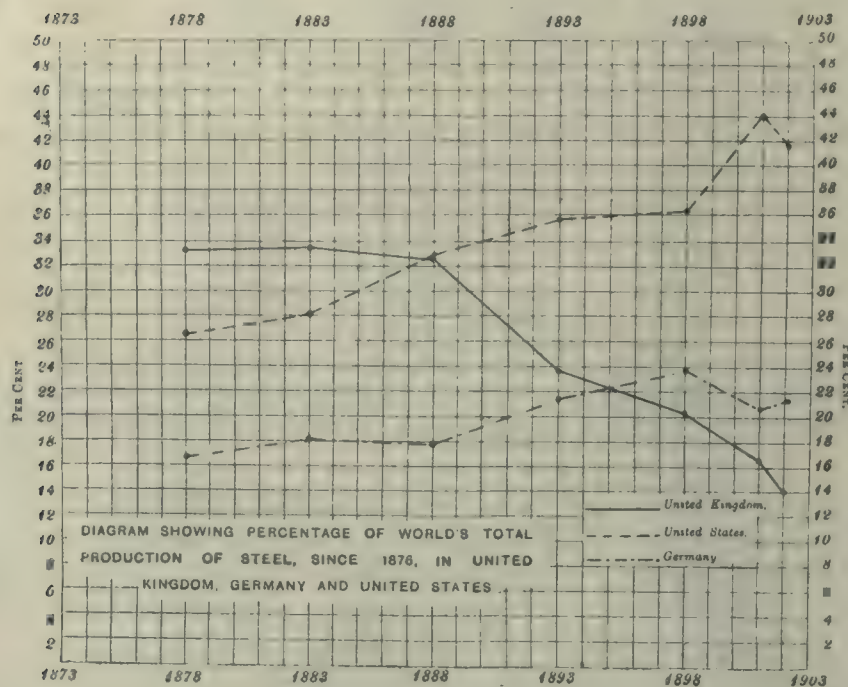
Table 10.

TABLE 10.—Production of Steel in Principal Countries expressed as percentages of the Total Production of the World.

Period.	United Kingdom.	United States.	Germany.	France.	Belgium.
1876-80	33.33	26.47	16.67	9.48	3.92
1881-85	33.51	28.06	18.20	8.16	2.89
1886-90	32.60	32.80	17.85	5.08	2.19
1891-95	23.57	35.73	21.27	5.36	2.45
1896-1900	20.04	36.34	23.74	5.42	2.71
1901	16.44	44.12	20.60	4.62	1.70
1902	13.51	41.63	21.32	4.49	2.12

Fig. 5.

FIG. 5.—Production of Steel in the Principal Countries expressed as percentages of the Total Production of Steel. (See Table 10.)



In the following table we show the consumption of Steel in the United Kingdom, United States of America and Germany, per head of the population. Consumption of Steel.

38 TABLE 11.—Consumption of Steel in Principal Countries *per head of the population,** in undermentioned periods (in lbs). Table 11.

Period.	United Kingdom.	United States.	Germany.
1876-80	64	37	25
1881-85	124	66	50
1886-90	189	117	80
1891-95	171	150	117
1896-1900	258	247	216
1901	258	371	236
1902	253	404	282

* In the case of quinquennial periods, the population has been taken as that of the middle year of the period.

In the following table we show the growth of the per capita consumption of Steel in the same Countries. Per capita consumption.

39 TABLE 12.—Growth of *per capita* consumption of Steel in principal Countries and under-mentioned periods. Table 12.

Period.	United Kingdom.	United States.	Germany.
1876-80	100	100	100
1881-85	194	175	201
1886-90	295	314	320
1891-95	266	402	465
1896-1900	402	662	862
1901	402	992	939
1902	394	1081	1126

40 The results in the case of steel are, if possible, even more striking than in the case of pig iron :— Summary as to Steel

- (1) In the period 1876-80, the quantity of steel annually produced in the United Kingdom was one-third of the total quantity produced by all countries ; it is now less than one-seventh. The United States on the other hand has increased its share of the total production of steel from about one quarter to two-fifths ; and Germany from one-sixth to more than one-fifth.
- (2) If we take consumption of steel per head of the population, the increase in the case of the United Kingdom is from 64 lbs. to 253 lbs., but, in the case of the United States, the increase is from 37 lbs. to 404 lbs., and in Germany, from 25 lbs. to 282 lbs.
- (3) While the steel requirements of the world are rapidly increasing, the steel industry of the United Kingdom is almost stationary, and the steel industry, both of the United States and Germany, is rapidly progressing.

SECTION III.—THE POSITION OF THE BRITISH IRON AND STEEL TRADE WITH REGARD TO (i.) THE HOME MARKET, (ii.) EXPORTS TO FOREIGN COUNTRIES AND BRITISH POSSESSIONS.

Growth of Home Market.

In Table 13 we give a summary of a more detailed table printed in the Appendix, in which, taking the Iron and Steel industry as a whole, we show what is our present position with regard to the home market. The articles into which iron enters as the principal material have been taken into account, and the quantity of pig iron required for this amount of material has been estimated.

41

Table 13.

TABLE 13.—Production of Pig Iron and Exports, Imports and Home Consumption in terms of the estimated equivalent of Pig Iron (in thousand tons.)

42

	Production.	Exports.	Imports.	Total Home Consumption.
1876	6,556	2,908	193	3,841
1890	7,904	5,292	467	3,079
1902	8,680	4,879	1,402	5,203

It will be seen that the home consumption had risen between 1890 and 1902 by no less than two million tons, an increase of 70 per cent. ; and that our exports had diminished by four hundred thousand tons, or $7\frac{1}{2}$ per cent. Our imports during the same time had increased by 200 per cent. Thus it is clear that foreign manufacturers have gained far more than British manufacturers from the increase in the British home market.

Export Trade.

The following table has been compiled from official sources to show the quantity of the various descriptions of Iron and Steel products exported to foreign countries and British possessions respectively. In the Appendix will be found detailed tables showing the growth of British and foreign trade respectively with British colonies and dependencies.

43

Table 14.

TABLE 14.†—Average Annual Exports of Iron and Steel, and Manufactures thereof, to Foreign Countries and British Possessions, in periods 1893-7, 1898-1902 and in 1903 (in thousand tons).

44

Description.	Average 1893-1897.			Average 1898-1902.			1903.		
	To Foreign Countries.	To British Possessions.	Total.	To Foreign Countries.	To British Possessions.	Total.	To Foreign Countries.	To British Possessions.	Total.
Railroad Materials ...	255	335	590	280	310	590	261	462	723
Steel Bars	69	24	93	84	52	136	72	86	158
„ Sheets	103	24	127	94	41	135	79	82	161
„ Black Plates ...	43	1	44	57	—	57	60	5	65
Steel and Iron Manufactures	15	14	29	19	25	44	27	37	64
Iron, Cast, and Manufactures	67	65	132	69	60	129	23	55	78
Pig Iron	895	60	955	1,094	65	1,159	921	145	1,066
Wire, Iron and Steel*	18	26	44	21	25	46	27	33	60a

* Excluding telegraphic wire.

a Now including telegraphic wire.

† The detailed figures upon which this Table is based are printed in the Appendix. (Section XIV., Table 52, "Development of Home and Export Trades.") Tables giving values of imports and exports are printed in the Appendix.

TABLE 14—continued.

Description.	Average 1893-1897.			Average 1898-1902.			1903.		
	To Foreign Countries.	To British Possessions.	Total.	To Foreign Countries.	To British Possessions.	Total.	To Foreign Countries.	To British Possessions.	Total.
Iron Sheets and Plates ...	42	26	68	21	22	43	41	87	128
Galvanised Sheets ...	82	120	202	99	159	258	141	211	352
Hoops and Hoop Iron ...	29	23	52	22	23	45	12	33	45
Tinplate Sheets ...	279	48	327	207	66	273	216	77	293
Anchors, Chains, Cables, &c.	14	5	19	16	7	23	16	9	25
Iron Tubes and Pipes ...	27	23	50	28	30	58	57	119	176 ^b
Nails, Screws, Rivets, &c.	7	11	18	8	12	20	12	22	34
Iron, Wrought, and Manu- factures	38	57	95	34	66	100	31	54	85
Steel Ingots and Blooms ...	16	1	17	13	4	17	11	2	13
Total ...	1,999	863	2,862	2,166	967	3,133	2,007	1,519	3,526
Total (excluding Pig Iron)	1,104	803	1,907	1,072	902	1,974	1,086	1,374	2,460

^b Partly ; formerly included in cast iron manufactures.

The above table shows that while our trade with the Colonies is increasing our trade with foreign countries is becoming more and more restricted. This conclusion is more striking if we exclude pig iron and concentrate attention on the more finished products. Although our trade with British possessions is increasing, it is shown in the detailed tables, printed in the Appendix, that Colonial markets are growing much more rapidly than British trade in those markets, and that foreign countries are taking a larger and larger proportion of the Colonial trade.

SECTION IV.—EXPERIENCE OF MANUFACTURERS.

45

The relative decline of the British Iron and Steel industry, shown in the summary tables we have given, is illustrated in nearly all the replies to our Inquiry Forms. Although some firms are favoured by their geographical situation, while others derive advantage from the monopoly conferred on British manufacturers by Admiralty specifications, or from the fact that their goods are not yet produced in foreign countries, there is a general consensus of opinion as to the severity and unfairness of foreign competition in our home market,* the rapid substitution of foreign for British-made materials, the loss of foreign markets, chiefly through the operation of tariffs, and the growth of foreign competition in the Colonies. (See Replies to Form and Evidence of Witnesses in Appendix.)

**Severity of
Competition in the
Home, Foreign, and
Colonial Markets.**

46

With all the Inquiry Forms and the evidence of Witnesses before us, we do not find there is any dispute as to the industrial and commercial conditions we have so far reviewed. British manufacturers had, in former times, a virtual monopoly of the home market for iron and steel ; they had foreign countries, as yet undeveloped, as customers for their surplus products ; and they had no competition in British Colonies and Dependencies. The methods of production, first established

**Relative decline of
the Iron and Steel
Industry :
Summary of
Evidence.**

* A list of articles in respect to which complaint is made of foreign competition is printed in the Appendix.

in the United Kingdom, have since 1870, in the ordinary course of economic development, which no power could check, extended to foreign countries ; and these countries have made it the principal object of their policy to encourage national industries similar to those carried on here. Great areas, formerly divided by tariffs into many separate states, have been consolidated, and thus foreign manufacturers have obtained large and growing home markets, from which British products have been shut out by import duties, so high as to be practically prohibitive. These countries have adopted every means in their power to exclude foreign competition, to improve their methods of production and to secure absolute control of their home market. Having achieved these objects, in recent years their policy has been directed to the capture of the home, foreign and colonial trade of the United Kingdom. In the British home market, their competition, commencing at the lower stages of production, has rapidly advanced until it is now practically co-extensive with the Iron and Steel industry. By thus attacking our home market, which is open to them without let or hindrance, they have diminished the competitive power of British manufacturers to push their trade in neutral markets, and they are now threatening our position in British Colonies.

The evidence shows that we are only at the beginning of the era of foreign competition, that that competition is certain to become more and more severe, and that to maintain the British Iron and Steel industry in a state of efficiency, strenuous efforts are absolutely necessary.

SECTION V.—ALLEGED CAUSES OF THE RELATIVE DECLINE OF THE BRITISH IRON AND STEEL INDUSTRY.

In analysing the causes of the decline of the British Iron and Steel industry, we have considered the various factors which from time to time have been alleged to be sufficient to account for it, and have endeavoured to estimate their importance in the light of the actual experience of manufacturers.

**Natural Dis-
advantages.**

It is frequently alleged that, relatively, to the United States and Germany, the United Kingdom suffers under certain natural disadvantages which no policy can remove. So far as such disadvantages exist they may be presumed to occur in connection with the supply of suitable ores. In the Evidence of Witnesses (Section XVII.) are shown the sources of our ore supplies at present, the sources of the ore supplies of foreign competing countries, and, so far as is practicable, the average distance of the ore supplies from the furnaces. The evidence proves that an adequate supply of ore of a suitable character is a question of organisation and freights ; that in respect of distance the United Kingdom is under no disadvantage, as compared with her most serious competitors ; and that, in addition, its coal supply is not inferior to that of any other country in respect of quality or cost. The Witnesses we have examined are of opinion that, given the great lead which the British Iron and Steel industry had over that of all other countries, there was no reason in natural conditions why that lead should not have been maintained. Some Witnesses add that, supposing a preferential system were established, which stimulated the export of British manufactures to the Colonies, it would be possible, by means of return freights, to cheapen and develop the supply of Colonial ores and that in these circumstances the United Kingdom would have an advantage over other countries.

Education.

In all the questions addressed to Witnesses great importance has been attached to the subject of technical and higher education generally, as a factor in the present situation. It was shown in evidence that it is in the higher branches of the Iron and Steel trade, *i.e.*, where scientific training is most important, that British manufacturers are most efficiently served. Witnesses are unanimously of opinion that the admirable institutions we already have should be improved, extended, and supplemented with new agencies. The general conclusion from the evidence is that, if we include

under technical and higher education a broad and thorough training in the policy and circumstances and methods of organisation of foreign countries, there can be no doubt that the British Iron and Steel trades, along with other trades, has in the past suffered from the inadequate provision for training in these subjects, but it cannot be maintained that education alone, divorced from the larger question of policy, would have sufficed to maintain the lead of Great Britain.

50 To examine into Local Rates, except in so far as they enter into the cost of production, lay outside the scope of our inquiry. But in the Special Form, which we issued to Iron and Steel manufacturers, we included a question asking for exact particulars of the amount paid. Many firms responded to our request, some of them giving information for a period of years. There is ample evidence that the burden of rates has increased, but we are satisfied that the amount of the increase is inadequate to account for the adverse conditions which have prevailed in recent years. **Local Rates.**

51 In regard to the methods of raising capital, and the general Finance and Accounting arrangements of this and other countries, the balance of advantage appears to be, in the opinion of Witnesses we have examined, in favour of this country. **Finance and Accounting.**

52 Both Witnesses and firms replying to our Inquiry Forms are of opinion that, not only are the hours of labour shorter in the United Kingdom than with our competitors, and wages higher (except in the case of the United States), but that the cost of labour per ton in existing conditions is on the whole greater. But the difference of labour cost is not a new factor in the situation, nor does it account for the demoralisation of the market which has marked recent years. **Labour Costs.**

53 Both in the replies to our Inquiry Forms and in the evidence of Witnesses who appeared before us there is a general consensus of opinion that freight charges both by land and water are more burdensome in the United Kingdom than in foreign countries, and that the trade of this country is injured by the preferential rates of our competitors. But in the opinion of Witnesses it is not transport charges alone which constitute the new element of danger, but the combination of the transport policy of foreign countries with their tariffs and export organisation. **Transport Charges.**

54 It is in the organisation and policy of foreign countries, combined with the British policy of free imports, that we find the explanation of the difficulties from which British trade is suffering at the present time. The weakness of the argument, which explains the decline of the Iron and Steel trade by reference to the other causes we have mentioned, lies in the fact that it takes no account of the most important and characteristic features of modern industrial organisation, and it is impossible with these causes alone in view to establish any relation between the demoralisation of the market and the facts of the situation. **Organisation and Policy of Foreign Countries.**

SECTION VI.—THE EXPORT SYSTEMS OF FOREIGN COUNTRIES.

55 All manufacturers lay the greatest stress upon the importance of the continuous running of the works and a large output as a means of securing the most economical cost, and the evidence shows that the question of the policy to be adopted turns upon the comparative advantages of Great Britain and foreign countries in this respect. In this important branch of our inquiry we have had the great advantage of the co-operation of numerous firms throughout the country, who have confidentially placed at our service particulars with regard to the costs in their works. From **Continuous running and Reduction of Costs.**

this evidence we select the following typical examples which at once bring out the manner in which the saving is effected :—

55 *contd.*

Table 15.

TABLE 15.—Saving in Production of Steel from Pig Iron due to Increased Output of Steel.

56

19—					Tons finished.	Wages per Ton.			Fuel per ton.
Week ending.						£	s.	d.	T. Cwt.
February —th	...	...	...	...	2,364	...	0	16 10 $\frac{1}{4}$	2 0 $\frac{1}{2}$
February —th	...	...	...	...	2,222	...	0	17 6 $\frac{3}{4}$	2 0 $\frac{1}{2}$
Average					...	...	0	17 2 $\frac{1}{2}$	2 0 $\frac{1}{2}$
March —th	...	...	...	...	3,093	...	0	14 8	1 10
April —th	...	...	...	...	3,105	...	0	14 2 $\frac{1}{2}$	1 9 $\frac{3}{4}$
Average					...	...	0	14 5 $\frac{1}{4}$	1 9 $\frac{7}{8}$
Thus the saving due to increased Output was ...						...	0	2 9 $\frac{1}{4}$	0 10 $\frac{5}{8}$ Cwt.
Add 10 $\frac{5}{8}$ Cwt. Fuel at 4s.						...	0	2 2	
Add Stores and General Charges... ..						...	0	1	
We obtain total saving of						...	0	5 11 $\frac{1}{4}$	per Ton

Thus the saving on the second period when the works were running nearly full time as compared with the first period, when they were running about three-quarter time, was almost 6s. a ton, or in the case of this particular firm about £45,000 a year. It will be noticed that the saving is effected on wages, fuel and general charges.

Another manufacturer states that the difference between the cost at full work and half work, reckoning the increase in coal, pig iron, and other materials, and including depreciation and all charges, amounted on billets to 15s. 6d. per ton, on bars to £1 2s. per ton, on plates to £1 12s. per ton. If we take a steel works, whose full capacity is 1,000 tons of plates per week, at full work the cost of ship plates is say £5 per ton; if only half employed, the cost would be £6 12s. per ton.

Fluctuation of Costs.

Such figures vitiate all comparisons of the productive power of one country with that of another, based upon average costs, which pay no regard to output, the period during which the works have been running, or the trade policy adopted by manufacturers. We may take the figures relating to one period, and apparently prove that the cost of production is higher in one country than another, but the figures of another period will point to the exactly opposite conclusion. Costs, in fact, according to the Witnesses we have examined, vary from week to week, and month to month, and averages for a long period, during which great fluctuations occur, are no guide as to the relative position and capacity of competing countries. Taking the various elements of costs, Witnesses are of opinion that British manufacturers under equal conditions of Free Trade or Tariff are under no serious disadvantages; and can produce as cheaply as their competitors in similar circumstances. Short time is, in their view, of infinitely greater importance in increasing the cost of production than all the other general causes which have been mentioned put together. To secure the home market from unfair competition, and to obtain the most advantageous conditions for an export trade are, they think, the best means of preventing fluctuations, except such as may be due to the ordinary incidents of trade, and of securing continuous running of the works, and, therefore, the continuous employment of the working classes. The Witnesses we have examined are of opinion that foreign countries, particularly Germany and the United States, have

57

not only grasped the truth of these propositions, but made them the basis of their export organisation. That organisation turns upon (A) their tariffs; (B) their transport policy; (C) their trusts and kartells.

(A) TARIFFS.

58

The Witnesses we have examined are agreed that it is the control of the home market which their tariffs give to foreign countries, combined with the facilities for exportation which they secure through their trusts and kartells, and the free access to the British market, which is the condition of their rapid progress relative to the United Kingdom. These tariffs were, in many instances, deliberately adopted to shut out British products which came into competition with home manufacturers. Their adoption has been followed by (i.) the extinction or diminution of British competition in the foreign protected markets; (ii.) the closing of British works or of departments of British works which depended on these markets; (iii.) the rapid growth of the foreign competing industry; (iv.) the appearance on the British market of the products of that industry at prices which the British manufacturer cannot touch. Thus, the positions of the United Kingdom and its most powerful competitors have been reversed.

**Results of Foreign
Tariff Policy.**

(B) TRANSPORT POLICY.

59

These conditions, in the opinion of Witnesses, have been accentuated by the operation of the railway systems of Great Britain and foreign countries respectively. Nearly all the firms replying to our Inquiry Forms maintain that the preferential rates by land and water granted to foreign exporters by railway and shipping companies are, taken in conjunction with the foreign tariffs, a source of injury to the British trader. We are informed that in neutral markets the difference between the rates, which can be obtained by the British and foreign exporter respectively, is frequently sufficient, in existing conditions, to turn the scale in favour of the latter.

Preferential Rates.

As an illustration it may be mentioned that at the present time freights from the United Kingdom to South African ports are more than double those charged from the United States to the same ports, and goods are now actually shipped from Liverpool, South Africa, *via* New York, as the cheapest route. The goods in both cases are carried in British vessels.

(C) TRUSTS AND KARTELLS.

60

Amongst the Witnesses we have examined, and in the returns made by manufacturers, there is some diversity of opinion as to the effect of Trusts and Kartells, so far as the promotion of economies of production is concerned, but there is a general agreement that, in association with the tariff policy of the countries concerned, the Trusts and Syndicates of the United States, and more particularly the Kartells of Germany, are a powerful aid in securing the control of the home market and, as a consequence, in regulating the export trade.

**Combinations and
Economies of
Production.**

61

The organisation of the trusts and kartells is described in detail in the Appendix. It is sufficient to state here that the kartells:—(i.) Fix prices. (ii.) Settle the quantities to be produced. (iii.) Allot the districts of activity for each associated group. (iv.) Watch the market and make contracts with customers. (v.) Distribute orders among their members. (vi.) Regulate the production of each works according to the demand, and thereby avoid keeping any works only partially going. (vii.) Admit new members within the union. (viii.) Deal in the total product of the associated factories, or sometimes only with a particular class of product, to the exclusion of all other members. (ix.) Receive the proceeds of sales, and compensate the members for any deficits or excesses on production. (x.) Assign and pay bonuses on exported goods. (xi.) Levy fines on members transgressing the general rules of the agreement.

**Functions of the
Kartells.**

SECTION VII.—DUMPING.

(A)—THE FACTS OF DUMPING.

Widespread
Character of
Dumping.

With this system, for securing maximum output and continuous running, at their command, foreign countries can produce at the lowest cost, keep up prices at home and, after supplying the home demand, dump their surplus on the British market at any price it will fetch, irrespective of cost. It is the openness of the British Iron and Steel industry to attack from dumping which, in the opinion of Witnesses, is the principal menace to its security, and the evidence we have received shows that, although some branches suffer more than others, most branches of the trade are now affected. We have printed in the Appendix actual contracts and other documents, too detailed to insert here, which prove how widespread and serious the evil has become, but the following cases are typical:—

62

Illustrations.

A firm employing nearly 1,500 hands, writing in February, states that the current price of basic pig iron in Germany was then 58 marks per ton. The lowest cost at which this could be converted into steel joists and beams could not be less than 31 m. per ton. Yet these German joists, costing not less than 89 m., were being offered f.o.b. Antwerp at 82½ m. per ton, less 2½ per cent. discount. The home price in Germany for joists f.o.r. at works, was 105 m. Similarly, the current price for pig iron at Pittsburg was \$13 (54s. 1d.); the cost of manufacturing these into billets could not have been less than \$6½ (27s. 1d.) per ton, making together 81s. 2d. Yet these were being delivered c.i.f., any British port, at 75s. per ton, making a difference of 6s. 2d. per ton, exclusive of sea freight and land freight from Pittsburg to the American port. The home prices for these billets at Pittsburg was \$24 (100s.).

63

Other instances of the great disparity between the home and export prices have been given to us. We have, for example, received an original quotation for steel sheets of a German firm. The price quoted was £5 14s. to £6 1s., according to gauge, delivered f.o.b. Antwerp, though they could at this time not be obtained from British makers at less than £7 12s. 6d. per ton. But for the special clause of the terms of sale prohibiting re-importation into Germany, *it would have been possible, in these circumstances, to re-export sheets from this country to Germany at a profit.*

(B)—DUMPING PROFITABLE TO THE PRODUCER.

Profits of
Dumping.

The first case mentioned above shows how the profit to the manufacturer arises. The estimated minimum cost for (German joists was 89 marks. Adding freight and fixed charges, estimated at, say, 2½ marks, the total cost of exported goods, f.o.b. Antwerp, is 91½ marks. At a selling price of 81½ m. this represents a loss of 10 marks per ton. Assuming the costs for depreciation, &c., to be one mark per ton, the cost to the manufacturer f.o.r. at works is 90½ m. At 105 m. this gives a profit of 14½ m. per ton sold in the home market. Hence, he could sell 14½ tons at the export price for every 10 tons sold at home, and be under no net loss. Or, in other words, he could sell 59 per cent. of his total output to foreign markets at 82½ m. per ton and be at no loss, provided that the remainder of his output were sold at not less than 105 m. per ton. So long as the export sales are less than 59 per cent. of the total output, he would make a profit.

64

Economies of
Continuous
Running.

The ability of the foreigner to dump his goods in this country, not only without losing by the process, but actually increasing his profits thereby, is brought out by the figures supplied by a British firm. Last year they produced 114,000 tons, the cost per ton in the conditions then prevalent being £4 15s. Selling this at an average price of £5 per ton, their profit was £28,500. But if their works had been employed to their full capacity, namely, 152,000 tons, the cost per ton would have been reduced to £4 10s. This extra production of 38,000 tons could have been sold at cost price, and yet, owing to the all-round reduction upon cost of production, their profit would have become £57,000. Thus, it will be seen that they could have sold this 38,000 tons

65

at considerably below cost, and still have increased their profits had there been any market in which they had been able to dispose of it.

66

In view of these conditions, it is, in our opinion, impossible to maintain that dumping is merely a temporary expedient, unprofitable to the countries which practice it, and, therefore, certain to be abandoned. In fact, the evidence indicates that dumping is part of an organised policy. The evidence further suggests that just as foreign competition, commencing at the lower stages of production has, as we have shown, gradually extended, so foreign countries must inevitably find it profitable to dump in branch after branch of the more finished manufactures as their productive power increases.

Permanence of Dumping if existing conditions are maintained.

(C)—THE STATE OF EMPLOYMENT.

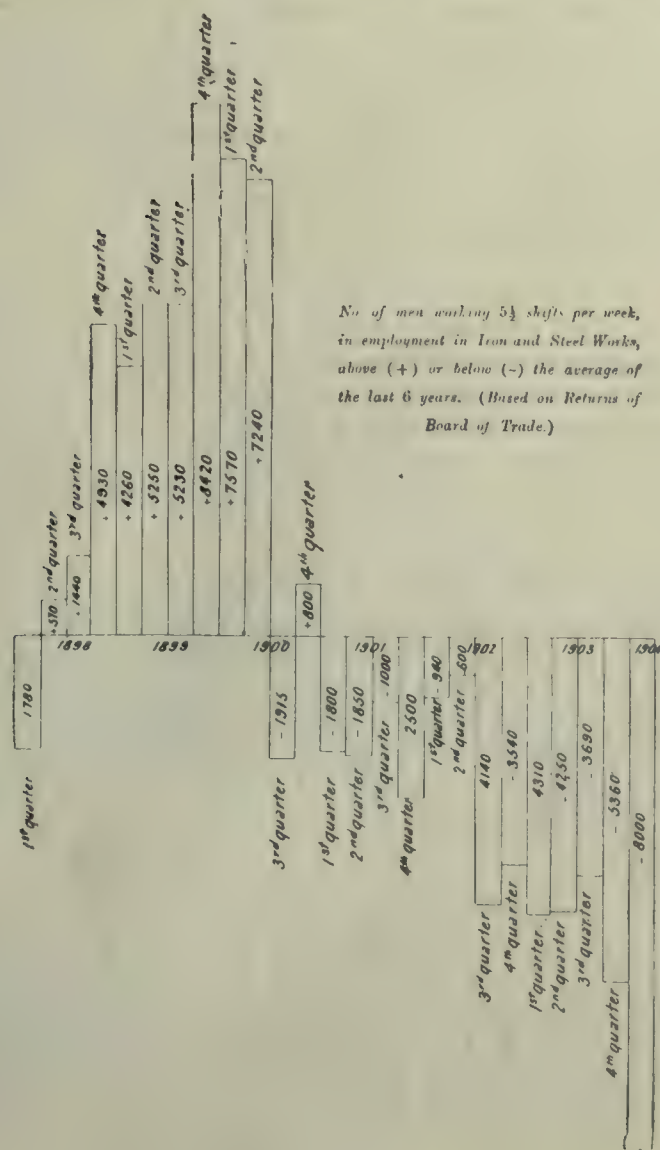
67

The figures on which the following diagram is based are given in the Appendix. They bring out the fact that the number of unemployed at the present time is greater than at any time during the last six years, and the amount of employment is 10 per cent. less than the average of the six years.

Abnormal number of unemployed.

68

Fig. 6.—State of Employment during recent years. (See Table on State of Employment in Appendix—Section XIV.)



Practically, all firms replying to the Inquiry Forms insist upon the importance of this loss of employment.

68 *contd.*

Loss of Wages.

The loss of wages, due to short time or the closing of works has, during recent years, amounted to a large sum. This fact is the more significant, because all the evidence we have received shows the extreme inconvenience and loss entailed on manufacturers, through stoppages and the discharge of the skilled workmen they have brought together. Instances have been brought to our notice of works kept going for years, at a small margin of profit, by manufacturers who are unwilling to destroy or weaken the organisations they have created.

69

Deterioration of Labour.

Several Witnesses have insisted on the manner in which irregularity of employment leads to a deterioration of the skill of the workers. One important witness, with a large experience, says: "I believe that, in consequence of intermittent employment, there is a perceptible deterioration in the physical condition of the workpeople—a disposition to become indifferent, slovenly and careless, when working short time." We shall have to consider, in a subsequent report, the alternative employments open to Iron and Steel operatives displaced by foreign competitors, but, so far as our investigations have gone, no development of industries has taken place, which can be regarded as a real and effective substitute for those branches of the Iron and Steel industry which have been lost or curtailed.

70

Dumping and the state of Employment.

It is, of course, impossible to say what proportion of those unemployed, or on short time, must be attributed directly to dumping. But, in the opinion of the manufacturers who have replied to our Inquiry Forms, dumping, during recent years, has been the principal cause of the loss of orders in the Iron and Steel trades, and we have been informed of a very large number of instances in which inability to compete with dumping quotations has been followed by short time, or the actual closing of departments of the works.

71

(D)—PROFITS.

Fallacy of Income Tax Returns.

All the Witnesses we have examined state that dumping has diminished profits. The importation of dumped goods has compelled manufacturers to produce on a very narrow margin of profit and sometimes at a loss with a view of keeping their men together. We are informed that, with very few exceptions, no Steel works are making profits proportionate to the capital employed. This view is, at first sight, in conflict with the Income Tax returns, which are frequently quoted to show a great increase, during recent years, in income derived from Iron and Steel works. But there is general agreement amongst the Witnesses we have examined that the Income Tax returns are absolutely fallacious as an index of the profits made in the Iron and Steel industry. Several important and representative firms also have been good enough to place at our disposal figures showing separately the profits derived from Iron and Steel and from Collieries with which their Iron and Steel works are amalgamated. It appears from these figures that the large profits which appear in the Income Tax returns are principally due to the fact that special circumstances have operated in the case of Iron and Steel manufacturers owning and working collieries, and not to the prosperity of the Iron and Steel trade. In the returns made by firms of this description to the Income Tax authorities the two sources of profit are not separated.

72

(E)—SECURITY OF CAPITAL.

Capital invested in the Iron and Steel industry.

It is impossible to obtain reliable figures as to the amount of capital invested in the industry for a period of years, and estimates which have been made, owing to the changes which have taken place in connection with the amalgamation of works and fluctuations in the value of Iron and Steel stock, do not afford a very satisfactory basis for comparison. The difficulty of making an estimate is also increased by the fact that so many of these establishments own their own

73

coal and iron mines, and, in some cases, carry their iron and steel into the most highly-finished stages of manufacture, as boiler-making and general engineering. According to the United States Census, the capital invested in the Iron and Steel trades of that country was 583 million dollars (122 million £) in 1900, as compared with 380 million dollars (79 million £) in 1890, and 235 million dollars (49 million £) in 1880; and, although such figures must be accepted with the greatest caution, there can be no doubt that they are so far as they go a useful index of the rapidity with which capital has flowed into that industry. In the United Kingdom, on the other hand, while it is impossible to make exact calculations, it is certain that the amount of working capital has considerably diminished, and all the Witnesses we have examined maintain that prevailing conditions have caused a general feeling of uneasiness and insecurity very unfavourable to the building of new works, the reconstruction or extension of old works, and the introduction of modern improvements.

(F)—EFFECT OF DUMPING ON GENERAL TRADE CONDITIONS.

74

With the evidence before us relating to other industries directly or indirectly connected with Iron and Steel, we find no advantages which, in any real sense, compensate for the disadvantages from which the Iron and Steel industry suffers through dumping. On the contrary, if we may judge from the replies to our Inquiry Forms, and other communications which have reached us, manufacturers are alive to the danger of depending, in any way, upon dumped products. Many of them state that they are obliged to purchase such products when they are on the market, for otherwise they could not hold their own against their competitors. But they realise the danger of conducting their business on the basis of materials sold at artificially low prices. When the foreigners have captured the trade, they fear that prices will be raised, and that they will be seriously handicapped in both the home and neutral markets. That this anticipation is well grounded, is shown by the fact, stated by Witnesses, that, after practically destroying the Wire Nail industry of this country, Germany and United States manufacturers have agreed on a price, at which wire nails should be sold here, of 15s. per ton above the price at which they are sold to any other country. When any branch of manufacture has been destroyed, it is extremely difficult to re-establish it. Other manufacturers feel, that unless drastic measures are taken at once, it will be their turn next to suffer from dumping. Manufacturers in many trades are naturally eager to know what will be proposed with regard to Iron and Steel, but we do not find anywhere any real appreciation of the advantages of dumping. The general feeling appears rather to be that the Iron and Steel industry must be maintained, both as the basis of other important trades, and because it is necessary for the security of the Empire.

Relation to other Trades.

75

We find, therefore, that dumping is of the most widespread character, and may, contrary to the view held by many, be profitable to the countries which practice it; that, unless checked, it is likely to remain one of the permanent incidents of trade; that it has already caused serious loss of employment and wages, diminished profits and brought about a feeling of insecurity throughout the Iron and Steel industry; and that there are no advantages to the consumers of dumped products, which, in the long run, can compensate for lasting injury to the Iron and Steel industry.

Summary as to Dumping

SECTION VIII.—THE REMEDY.

We have pointed out that, in the opinion of Witnesses, and firms replying to our Inquiry Forms, there is no relation between such general causes as natural advantages, technical education, railway rates, and the cost of labour, and the phenomena associated with dumping, and the evidence shows that it is the high tariff system of foreign countries, combined with the British policy of free imports which is the principal strength of the export organisations of our rivals.

76

Policy to be adopted.

In order to deal effectively with the conditions we have described it is necessary to curtail by the adoption of a tariff the advantage which our foreign rivals now enjoy in the British market. On the precise duties, however, which should be imposed, and the manner in which they should be arranged, the majority of the firms who responded to our inquiries are unwilling to express a definite opinion. The most frequent answer received to the question dealing with this point was that the duties to be suggested must depend upon the results of the careful examination of other trades and the general policy to be adopted by the country. Suggestions, when made, ranged from a moderate average duty of from 10 to 15 per cent. *ad valorem* to the adoption of a tariff based upon the tariffs of those countries with which we have to compete, and varied in individual cases. But there is a general consensus of opinion that whatever measures are ultimately suggested should be the result of careful calculation and business-like arrangement with a view to effectively securing the objects in view; and the general view was that a moderate scale of duties would be found adequate. Many of the suggestions received are printed in the Appendix. While, however, manufacturers showed themselves unwilling to make definite proposals in view of the fact that they were not and could not be acquainted with the details relating to other industries, we have received many valuable explanations of what, in their view, would be likely to be the effect of a moderate duty, supposing it were adopted.

77

Tariff Scheme.

Effect of Tariff on Prices.

Effect on prices in the Home Market.—On this point the general opinion is that prices would certainly not rise to the extent of the duties, and that such rise as may take place would not be permanent. The argument of manufacturers is that the importation of dumped goods hampers British enterprise; that British works are employed far below their full capacity; and that, in the event of the imposition of duties, their production would be increased.

78

Effect on Continuity and Security.

Effect on continuity and security in the Home Trade.—Since the duties imposed would, it is assumed, be sufficient to remove the present causes of irregular working and insecurity, or, at any rate, greatly diminish their force, it follows that there would be a stronger disposition to invest capital in laying down new plant or building new works.

79

Effect on Economies of Production.

Effect in promoting economies of production.—The general view is that, having secured the home market from dumping, greater continuity of working, and, therefore, reduced costs would result. The domestic competition of manufacturers would then bring prices down, probably below their present level.

80

Effect on Employment and Wages.

Effect on employment and wages.—Greater continuity of working involves more continuous employment and increased earnings. At the same time the cost of labour per ton would decrease.

81

Some manufacturers hold opinions at variance with those stated above, and maintain that prices would rise to the full amount of the duty, and remain at that level. But very few in proportion to the whole number take this view. The vast majority are strongly of opinion that a moderate tariff would not permanently raise prices.

82 We are of opinion that the situation with regard to the Iron and Steel Trades described in the foregoing Report can be dealt with only by the combination of three principles in the arrangement of the British tariff. We think there should be three grades of tariff, viz.: The General Tariff; The Preferential Tariff; and The Maximum Tariff:—

Three principles to be combined in a British Tariff.

83 **The General Tariff.**—In Inquiry Form No. 1, we included a question asking for suggestions as to the reduction of the tariffs of foreign countries, which would enable British manufacturers to compete successfully in those countries. We received a large number of replies to this question. Of the manufacturers who made definite suggestions, many stated that what they desire is the abolition of existing tariffs. We think it should be understood that the United Kingdom will always be ready to meet any country which will grant reciprocal treatment. But foreign countries having adopted their tariffs for the express purpose of safeguarding labour and fostering their national industries, it is not reasonable to expect that they can be induced to subject those industries to the full force of British competition. In these circumstances we are of opinion that a General Tariff consisting of a low scale of duties is necessary, the object of which should be the increase of employment and the maintenance of fair conditions of competition with countries which grant reciprocal treatment to the United Kingdom.

The General Tariff.

84 **The Preferential Tariff.**—With a view to securing freer trade within the Empire, the General Tariff should be subject to modification in the case of the Colonies. We find in the replies to our Inquiry Forms, and in the evidence of Witnesses, a strong and widespread appreciation of the benefits derived from the Preferential Tariffs of the Colonies. We are of opinion that we should do whatever is necessary to encourage trade within the Empire, and that under a system of mutual preference we may anticipate a rapid and substantial increase of the exports of British manufactures to the Colonies.

The Preferential Tariff.

85 **The Maximum Tariff.**—A Maximum Tariff, consisting of comparatively higher duties than those of the General Tariff, will be necessary in the case of countries which shut out our goods by practically prohibitive duties and refuse to negotiate on the basis of fair and reciprocal treatment.

The Maximum Tariff.

CONCLUSIONS.

86 Our inquiry has shown:—

Conclusions.

- (1) That the Iron and Steel industry of this country has declined relatively to that of other countries;
- (2) That our export trade to foreign countries has diminished, while that to the Colonies has increased;
- (3) That, although our trade with the Colonies has increased, the Colonial market is increasing much more rapidly, and that foreign countries are securing a growing proportion of this Colonial trade;
- (4) That the relative decline of the British Iron and Steel industry is not due to any natural British disadvantages or want of skill and enterprise on the part either of British manufacturers or of British workmen;
- (5) That it is due to the fact that the manufacturers of the United States and Germany, having secured control of their home markets by means of

high tariffs and an organised system for the regulation of their export trade, are in a position to dump their surplus products upon the British and other markets, irrespective of cost ;

- (6) That the practice of dumping could not be carried on by foreign countries, but for the British system of free imports ;
- (7) That the British fiscal system should be revised in such a manner as to check this practice, to maintain, so far as possible, our export trade to foreign countries, and develop our Colonial market and increase the employment of the working classes ;
- (8) That these objects can be obtained by means of a system of tariffs arranged as follows :—
 - (A) A General Tariff, consisting of a low scale of duties for foreign countries which admit British wares on fair terms ;
 - (B) A Preferential Tariff, lower than the General Tariff, for those of our Colonies which give adequate preference to British manufactures, and framed with a view to securing freer trade within the British Empire ;
 - (C) A Maximum Tariff, consisting of comparatively higher duties, but subject to reduction by negotiation to the level of the General Tariff.

Signatures of
Commissioners.

(Signed*) ROBERT G. W. HERBERT (*Chairman*).

C. ARTHUR PEARSON (*Vice-Chairman*).

CHARLES ALLEN.

F. BAYNES.

HY. BIRCHENOUGH.

CHARLES BOOTH.

H. BOSTOCK.

S. B. BOULTON.

R. BURBIDGE.

V. CAILLARD.

J. J. CANDLISH.

H. CHAPLIN.

JOHN A. COCKBURN.

J. H. COLLS.

J. G. COLMER.

W. COOPER.

* The following paragraph from the official statement issued on December 30th, 1903, as to the constitution of the Commission, describes the exact position of Colonial Members of the Commission :—“ It will not come within the scope of the Commission to define the nature of the arrangements to be made with regard to Colonial trade, or to make representations with regard to the preferences which the Colonies can be asked to give. In such arrangements as these the Colonies are equally interested with the Mother Country, and terms can only be settled properly by negotiations between the respective Governments concerned. Representatives of the Colonies who have joined the Commission have done so on the undertaking that they hold ‘ watching briefs,’ and that they occupy their positions in order to assist with their advice in matters connected with the new tariff as regards those parts of the Empire of which they have special knowledge.” Sir George Ryder, ex-Chairman of the Board of Customs, is a Member of the Commission in a consultative capacity only, and has taken no part in the detailed inquiry into special trades. He does not, therefore, sign the report.

J. A. CORAH.

JOHN W. DENNIS.

CHAS. ECKERSLEY.

FRANCIS ELGAR.

CH. ELLIOTT.

L. EVANS.

G. FLETT.

C. J. FOLLETT.

THOMAS GALLAHER.

V. GIBBS.

ALFRED GILBEY.

WILLIAM J. GOULDING.

W. H. GRENFELL.

F. L. HARRIS.

JOHN M. HARRIS.

WM. HARRISON.

ALEX. HENDERSON.

ALFRED HICKMAN.

ALFRED L. JONES.

ARTHUR KEEN.

J. J. KESWICK.

IVAN LEVINSTEIN.

W. THOMAS LEWIS.

ROBT. L. LITTLEJOHN.

CHARLES LYLE.

A. W. MACONOCHE.

HENRY D. MARSHALL.

W. H. MITCHELL.

A. MOSELY.

A. NOBLE.

C. A. PARSONS.

W. PEACE.

W. B. PERCEVAL.

C. J. PHILLIPS.

J. RANK.

R. H. READE.

CECIL CLEMENTI SMITH.

C. TENNANT

FRANCIS TONSLEY.

JOHN TURNEY.

S. J. WARING, Jr.

W. BRIDGES WEBB.

W. A. S. HEWINS (*Secretary*).

The following provisional scale of duties for the General Tariff, in the calculation of which due consideration has been given to the proportion of labour involved at all stages of manufacture, has been prepared as an indication of the nature of the scheme which may hereafter be recommended for the Iron and Steel industry, when the inquiry into other trades and interests (including agriculture²³) has been completed. This provisional scale is concerned only with the Iron and Steel industry, as defined in paragraph 8 of this Report

* An Agricultural Committee has been constituted, and has made considerable progress with its inquiry.

88 *contd.* and in the Classification in the Appendix. The Engineering, Machinery, Shipbuilding, and the Hardware, Holloware and Cutlery trades will be the subjects of subsequent reports.

Description.	Range of duties expressed as <i>ad valorem</i> rates.*
Iron Ores	Free.
Pig Iron	5 per cent.
Iron and Steel: Puddled Bars, Ingots, Blooms, Billets, Slabs, Sheet Bars, Tin Plate Bars, or similar partly manufactured materials	6½ per cent.
Rails, Sleepers and Fish Plates	
Girders, Joists and Beams	
Bars, round, square, flat, and sections other than above enumerated	
Slit Rods	7½ per cent.
Wire Rods	
Plates	10 per cent.
Sheets	
Nails, Screws and Rivets	Duties in no case to exceed 10 per cent.
Bolts and Nuts	
Tyres and Axles	
Railway Wheels and Axles	
Crucible Steel and manufactures of Iron and Steel unenumerated	

* The duties are stated for convenience as *ad valorem* rates, without prejudice to the question whether the duties to be ultimately recommended by the Commission will be *ad valorem* or specific.

APPENDIX.

SECTION IX.—RULES OF PROCEDURE.

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The following Rules of Procedure were adopted at the first meeting of the Commission:—

Rules of Procedure.

1. The Ordinary Meetings of the Commission shall be held on Wednesdays at 3 p.m., and Thursdays at 11 a.m., and for the purpose of Agenda and Minutes, these two meetings shall count as one.
2. The Chairman may, at any time, summon an Extraordinary Meeting of the Commission, and shall do so on the receipt of a written requisition to that effect, signed by ten Members of the Commission.
3. So far as may be practicable, a week before any Meeting of the Commission, a summons shall be left or delivered by post at the usual place of abode of every Member of the Commission, and a paper specifying the business proposed to be transacted thereat, signed by the Secretary to the Commission, shall, if practicable, be sent with the summons. Members of the Commission who are unable to attend may communicate to the Secretary any points arising out of the Agenda they would wish to have considered.
4. Want of service of the summons or Agenda Paper on any Member of the Commission shall not affect the validity of the Meeting.
5. No business shall be transacted at a Meeting other than that specified in the Agenda Paper relating thereto, except any matters of urgency which have arisen too late to be specified in the Agenda Paper, and which may be brought before the Commission by the Chairman with the consent of a majority of those present.
6. The Commission may adjourn a Meeting to any day or hour as it thinks fit.
7. When a Meeting is adjourned, notice of the adjourned Meeting shall be sent to each Member of the Commission.
8. Every Member attending a Meeting of the Commission shall sign his name in the attendance book kept for the purpose.
9. At every Meeting of the Commission, the Chairman, if present, shall preside; in his absence the Vice-Chairman shall preside; if neither the Chairman nor the Vice-Chairman be present, the Chair shall be taken by such Member of the Commission as may be chosen by the majority of those present.
10. The Chairman may make fresh rules, or vary existing ones, with the consent of the majority of those present, but a quorum of ten shall be necessary for such procedure.

ORDER OF BUSINESS.

11. The order of business at every Ordinary Meeting of the Commission shall be as follows:—

- (A) Minutes of previous Meeting.
- (B) Statements by the Secretary to the Commission.
- (C) Applications.
- (D) Communications received.
- (E) Adjourned business other than reports.
- (F) Reports from Committees (if any).
- (G) Communications from any Committees of the Commission.
- (H) Motions of which notice has been given.
- (I) Examination of witnesses.
- (J) Transaction of urgent business.

MINUTES.

12. The Minutes of the last Meeting shall be taken as read, with a view to confirmation, provided that a copy of the Minutes shall have been sent to each Member of the Commission at least 48 hours previously.
13. There shall be no discussion on the Minutes except as to their accuracy.

COMMITTEES.

14. There shall be a General Purposes Committee, to prepare the business for each Meeting, to settle the records of transactions, and generally to carry out the decisions and directions of the Commission, subject to the Rules of Procedure.
15. In addition to the General Purposes Committee, the Commission may from time to time appoint Committees, either general or special, and consisting of such numbers of persons as the Commission may think fit, which, subject to the confirmation of the General Purposes Committee, may arrange for the consultation of experts, the drafting of forms of enquiry, the selection of witnesses and the preparation of evidence.
16. The Commission may appoint on such Committees persons who are not Members of the Commission.
17. The general reference to a Committee shall be specified at the time of its appointment, and may, at any time, be withdrawn or varied by the Commission, at its discretion.

ENQUIRIES AND SPECIAL REPORTS.

18. The Commission shall, in the first instance, invite members of the various trades to reply to questions referred to them on forms of inquiry to be issued by the Commission. All such questions and forms of inquiry in connection with the work of the Commission shall be issued from the offices of the Commission, and signed by the Secretary.
19. The Commission may also invite such individuals or associations as it may think fit, to report on subjects as to which it desires expert opinions or facts not already in its possession.
20. Subjects so referred shall be carefully defined and submitted to the Commission for approval.
21. The General Purposes Committee shall make arrangements for reports, *verbatim* or condensed, of the proceedings or resolutions of the Commission and Committees, and shall decide, after consulting (if necessary) the Commission, or any Witness directly concerned, as to the publication, or otherwise, of such reports or any portion of them.

WITNESSES.

22. Witnesses shall be informed in general terms of the subject upon which their evidence is desired at the time when they are invited to give evidence, and, if practicable, a fortnight before they are to appear they shall receive a detailed statement of the questions it is desired to submit to them, with a request to furnish, as early as possible, a general statement of the evidence they will be prepared to give.
 23. The examination in chief of a witness shall be conducted by the Chairman of the Meeting, or by such Member or Members of the Commission as he may invite to conduct it. The decision, whether any question is a right and proper one to be put to any Witness, shall rest with the Chairman.
 24. Information, whether written or oral, given to the Commission by Witnesses shall be treated as of a confidential nature when they so desire it.
 25. Witnesses shall be invited to give evidence irrespective of their views on Tariff Reform.
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SECTION X.—FORMS OF INQUIRY.

FORM NO. 1 (ISSUED TO ALL MANUFACTURERS).

7, VICTORIA STREET, LONDON, S.W.,

January 30th, 1904.

Form No. 1 (Manufacturers generally).

DEAR SIR,—I am desired by the Tariff Commission to ask you to assist the Inquiry they have undertaken by answering the questions on the enclosed Form. The questions have been framed with the view of obtaining the preliminary information which is necessary as the basis of the more detailed inquiry which will be conducted by means of Special Forms and the examination of Witnesses.

Copies of the enclosed Form are being sent to Manufacturers throughout the country. When the answers are received, the information so obtained will be tabulated in the Offices of the Commission.

If you have more than one Works, please fill in one Form for each Works. Additional Forms will be supplied on application.

You will see that it is not necessary for the purposes of the Inquiry that your name should be disclosed, and the fact that you have given information will be regarded as strictly confidential if you so desire.

Yours faithfully,

W. A. S. HEWINS, Secretary to the Commission.

General Form of Inquiry for Manufacturers.—Preliminary Questions only.

The information asked for by the Tariff Commission will, if desired, be treated as strictly confidential. Every Firm which replies to this application will be identified by a number registered in the Indexing Department of the Commission. By this system absolute secrecy is assured; and no member of the Commission will be informed of the source of the details supplied unless permission be given (see last page). The Commission request that this Form may be filled up and returned in the accompanying envelope to the Secretary, Tariff Commission, 7, Victoria Street, London, S.W. If not prepared to answer all the questions, it is requested that you will answer as many as you can.

I.—State the nature of your trade or trades, and whether your sales are for the (a) home, (b) foreign and (c) the colonial markets:—

II.—What was the weekly average number of persons employed by you during 1903, distinguishing, if possible, men from women and children?

Men.	Women and Children.	Total.
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III.—What are the principal articles that you manufacture for the home trade in respect to which you experience foreign competition?

IV.—Are any articles similar to those manufactured by you imported into this country below your cost price? If so, please state particulars as far as you can.

Country of Origin.	Description of Articles.
--------------------	--------------------------

V.—Have you any information leading you to conclude that such imported articles are placed upon the British market at or below the normal cost of production in the country of origin? If so, please state particulars as far as you can.

VI.—Is your trade subject to adverse competition from foreign countries in consequence of any difference in the rates of wages, in the hours of labour, or in other respects? If so, please give such particulars as you can.

VII.—Has your export trade suffered in recent years by the operations of the tariff of any country? If so, please state your experience.

VIII.—What amount of reduction of the tariff of any country would enable you to compete successfully within that country with commodities made therein similar to those you manufacture?

Description of Commodity.	Country.	Present Tariff.	Suggested Reduction.
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IX.—What is your experience in respect of foreign competition in the Colonies in your trade?

X.—Do you suffer any disadvantages from the operations of the Patent Laws or Registration Laws in other countries? If so, please state particulars.

XI.—Please state whether you would be willing to furnish to the Commission any further detailed information, and, if so, on what subjects?

Name of Firm (to be signed by authorised Representative)—

Address

[Before signing, see next page.]

If you wish the fact that you have furnished the Commission with the foregoing information to be considered as confidential, please sign here only, and not on preceding page. In that case, this page, bearing the name of your firm, will be torn off and filed as soon as the Form is returned to the offices of the Commission.

Name of Firm

Address

* Accompanied with a letter and instructions similar in terms to No. 1.

- 1.—What are the principal goods in which you deal ?
- 2.—If you are an importer, please state the principal goods you import, and from what Countries ?
- 3.—If you are an exporter, please state the principal goods you export, and to what countries ?
- 4.—What is the approximate percentage, by value, of your total turnover for the year 1903, which is—
Approximate Percentage.
 - (a) Imported by you and sold in the United Kingdom ?
 - (b) Imported by you and subsequently sent abroad ?
 - (c) Obtained by you in the United Kingdom and sold there ?
 - (d) Obtained by you in the United Kingdom and sent abroad ?
- 5.—If these proportions show considerable variations in recent years, please give details and explanations.
- 6.—What proportion, if any, of your total exports is directed to British Possessions, and if this part of your trade is increasing or diminishing, please give details and explanations.
- 7.—What proportion, if any, of your total imports comes from British Possessions, and if this part of your trade is increasing or diminishing, please give details and explanations.
- 8.—Is the proportion of foreign-made goods to British-made goods in any branch of your trade increasing or diminishing ? If so, please say to what extent, and give reasons for the change, if you can.
- 9.—Please give any instances of loss or partial loss of any foreign markets through the operation of Foreign Tariffs and Regulations.
- 10.—What general conclusions have you arrived at as to the effect of the Customs Regulations and Tariffs of the foreign countries with which your principal trade is carried on ?
- 11.—What is your experience of the effect of Preferential Tariffs—(a) colonial, (b) other ?
- 12.—What is your practical business experience as to the working and value of the most-favoured-nation clause in regard to your industry ?
- 13.—Has the growth of combinations in the United States, Germany, and other foreign countries affected your business either at home or abroad, and, if so, in what manner ?
- 14.—Is it within your experience that foreign traders are injuring your trade by disposing of their goods in any of your markets at a less price than they obtain for similar goods in their home markets ? If so, please give particulars as far as you can.
- 15.—Please give any information you have showing the effect on your trade of the differentiation in foreign countries of railway rates and shipping charges on goods exported to the United Kingdom, or other countries ?
- 16.—Has there been any change in recent years in the proportion of your exports of semi-manufactured to fully-manufactured goods, and to what reasons do you attribute any change that has occurred ?

Name of firm (to be signed by authorised Representative)—*

Address

* Confidential signature, if desired, as in the case of No. 1.

7, VICTORIA STREET, LONDON, S.W

DEAR SIR,—I am desired by the Tariff Commission to ask you to assist the Inquiry they have undertaken by answering the questions on the enclosed Form. The questions have been framed with a view of obtaining information relating to the Iron and Steel Trades, supplementary to that which has been already furnished to the Commission in response to the General Form issued to Manufacturers.

Copies on the enclosed Form are being sent to Iron and Steel Manufacturers throughout the country. When the answers are received, the information so obtained will be tabulated in the Offices of the Commission.

If you have more than one Works, please fill in one Form for each Works. Additional Forms will be supplied on application.

The fact that you have given information will be regarded as strictly confidential if you so desire.

Yours faithfully,

W. A. S. HEWINS, Secretary to the Commission.

Form of Inquiry for Iron and Steel Manufacturers.—Questions supplementary to Form No. 1.

The information asked for by the Tariff Commission will, if desired, be treated as strictly confidential. Every Firm which replies to this application will be identified by a number registered in the Indexing Department of the Commission. By this system absolute secrecy is assured ; and no member of the Commission will be informed of the source of the details supplied unless permission be given (see last page). The Commission request that this Form may be filled up and returned in the accompanying envelope, at the earliest possible date, to the Secretary, Tariff Commission, 7, Victoria Street, London, S.W. If not prepared to answer all the questions, it is requested that you will answer as many as you can.

- 1.—What was the approximate percentage of your total annual sales during each of the following five years for the (a) home, (b) foreign $\frac{\text{and}}{\text{or}}$ (c) colonial markets respectively ?

Year.	Percentage.		
	Home.	Foreign.	Colonial.
1899			
1900			
1901			
1902			
1903			

* 2.—If you have no objection, please state the value of your total annual sales for the last year or for each of the following five years :—

Year.								Total Sales.		
1899	..	..	..	..	..	..	..	£	s.	d.
1900	..	..	..	..	..	..	..			
1901	..	..	..	..	..	..	..			
1902	..	..	..	..	..	..	..			
1903	..	..	..	..	..	..	..			

* The Commission considers this question of great importance with a view to estimating the relation between the production for the home and export trades. Manufacturers are reminded that the fact that they have furnished this information will be considered as strictly confidential, and no use will be made of it which will enable Commissioners or others to trace its source.

3.—Give particulars of the principal supplies of the materials, raw and partly manufactured, required in your industry, and state from what countries they are derived.

Description of Materials.	Present Country of Origin.
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4.—State if any of the above-mentioned materials, now imported from foreign countries, were formerly obtained in the United Kingdom, and, if so, what has caused the change?

5.—What were the total payments in 1903 by your firm on account of (a) wages, (b) local rates, (c) coal, other fuel and motive power?

	Amount.
Wages	
Local Rates	
Coal, other Fuel or Motive Power	

6.—If you can do so, please give definite information as to the burden of local rates upon businesses similar to your own in competing foreign countries as compared with the local rates current in your district?

7.—What minimum duties, if any, on the articles imported, similar to those you manufacture, do you suggest as sufficient to safeguard the interests of your trade?

Description of Articles.	Suggested Duty.
--------------------------	-----------------

8.—If such duties were imposed what, in your opinion, would be the effect (a) upon prices in the Home Market, (b) in securing greater continuity and security in the Home Trade, (c) in promoting economies of production, (d) in increasing employment, and (e) in increasing wages?

9.—Taking 1903, as an example, can you give any statistics as to the loss of employment in your establishment due to the importation of goods you could have manufactured?

10.—Do you think that the importation of iron and steel manufactures below cost requires remedial measures, and, if so, of what character should such measures be?

11.—Have the Iron and Steel trades of Germany, the United States and Belgium and other foreign countries made any inroads on any markets, hitherto largely supplied from the United Kingdom, in any branch of business in which you are engaged? Give such particulars as you can.

12.—To what extent do you think that the recent developments of combinations in foreign countries give them an advantage in economising in the production of the class of goods produced by you, and in the expansion of their export trades? Please give such particulars as you can.

13.—Please give any information you have showing the effect on your trade of the differentiation of railway rates and shipping charges by foreign countries on goods exported to the United Kingdom or other countries.

14.—What is your experience with regard to the effect of Colonial or other Preferential Tariffs?

15.—Please state whether you would be willing to furnish to the Commission any further detailed information, and, if so, on what subjects.

Name of Firm (to be signed by authorised Representative)—

Address

(Before signing see next page.)

If you wish the fact that you have furnished the Commission with the foregoing information to be considered as confidential, please sign here only, and not on preceding page. In that case this page, bearing the name of your firm, will be torn off and filed as soon as the form is returned to the offices of the Commission.

Name of Firm

Address

I.—District and Branch of Trade represented.

1. What is the name and address of the firm with which you are connected ?
2. On what branch, or branches, of the Iron and Steel industry can you give evidence to the Commission ?
3. Have you, through your firm, any special knowledge of the conditions of trading abroad —i.e., in foreign countries or the Colonies—against which you have to contend ?

II.—State of Trade in Witness's District.

4. Has the volume of the business done by the Iron and Steel industry in your district increased or decreased in recent years ?
5. Have you any information respecting the fluctuations, if any have occurred, of business done by your trade in your district with (a) Foreign countries ; (b) The Colonies ; and (c) The British possessions ?
6. Have total net profits in your trade in your district increased or diminished in recent years in relation to turnover ?
7. Have any special branches of your trade become more or less remunerative in recent years ?
8. Has the trade in such branches increased in volume ?
9. What has been your experience regarding the amount and continuity of employment in your trade and district in recent years ?
10. Has the rate of earnings in your district and trade increased, or diminished, or altered, in any way in recent years ?
11. On the whole do you consider that the state of your trade in your district has been satisfactory or otherwise ?
12. Can you state about what time any changes referred to first manifested themselves ?

III.—Causes of Improvement or Deterioration.

13. To what causes do you attribute the change, if any, in the state of trade in your district ?

IV.—Difficulties or Advantages in the Supply of Raw Material and Geographical position.

14. From what source do you obtain your supply of iron ore ?
15. What is the average distance which such ores have to be conveyed to your district, and by what routes ?
16. Have you any information as to the comparative costs of extraction of ore in this country, United States, Germany, &c. ?
17. To what causes do you attribute these differences :—(a) Wages ; (b) Depth of workings ; (c) Modern machinery ?
18. Have you any information as to the relative advantages possessed by the countries mentioned in Question 16, in respect of the quality of ores mined there ?
19. What is the average cost in freightage per ton of ore from the mines in your district ?
20. What advantages do you consider the American trade to possess in consequence of the formation of Syndicates controlling the supplies of ore ?
21. What is the average distance which your supply of suitable coking coal has to be conveyed ?
22. Have you any information as to the comparative costs at works of suitable coals in your district, and in other countries ?
23. Have you had any experience in the use of Colonial iron ores ?

V.—Foreign Railway Rates and Organisation of Transport by Land and Water.

24. Have you any information bearing upon the relation between railway and canal rates in this and other countries ?
25. Does your trade suffer in any way from the preferential railway rates adopted in foreign countries ?
26. Do transport rates by land or water bear more heavily on your business than in other countries ?
- 27.—Can you say what is the average burden borne by each ton of, say, steel billets for transport from your works to the port of shipment ?
28. Has the railway organisation in connection with the great steel combines in America affected your trade ?

VI.—Return Freights and the Colonies.

29. Are you aware if any of our Colonies possess suitable iron ore which could be employed by you ?
30. Would the development of trade in these ores, thus securing a valuable return freight, facilitate your trade with them ?
31. Do you consider that the expansion of British exports and manufactures to the Colonies which might be induced by preferential tariffs would overcome the difficulties alleged to exist in regard to return freights ?

VII.—Processes used as compared with Foreign Countries.

32. Can you explain the causes which have led to the disproportion which exists in this country and in Germany and the United States between the production of steel by the Bessemer and Open Hearth processes?

VIII.—Relative conditions of different branches of the Iron and Steel Trade.

33. Have you any information upon the relative conditions of the different branches of the iron and steel trade, especially of the finished iron trade?

IX.—British and Foreign methods of Finance and Accounting.

34. Have you any information upon the different methods adopted in this country and in the United States for the raising of capital?

35. Do you consider that the common practice in this country of issuing debentures in front of fully paid up Ordinary and Preference shares as contrasted with Debentures only, or in front of fully paid Preference shares only, as is the practice in the United States, or the method of securing loans from Banks in Germany, facilitates the conduct of business in a large concern?

36. Have you any information enabling you to compare the burden of Administration charges, such as rents, commissions, salaries, &c., in this country, with other countries?

37. Have you any information bearing on the question of the incidence of local rates in its relation to prime cost in this and other countries?

38. Do you consider that the systems of checking used in the shops and the general methods of accounting by means of which prime cost is arrived at are, in foreign countries, superior to that adopted here?

X.—Importance of Technical and Commercial Training and Higher Education of all Grades.

39. Do you consider that, on the whole, the systems of Technical and Commercial and Higher Education generally promote the production of a superior class of workmen in foreign countries?

XI.—Causes of Amalgamation.

40. Have you any information bearing upon the causes which have led to the amalgamations of large concerns in the United States and in Germany and in other countries? Whether amalgamations could have existed without a tariff?

41. Do you consider that these amalgamations have been desired to secure the sole control of the elements of production, *e.g.*, mines, railways, ships, &c.?

42. Or do you consider that their existence is due entirely to the desire to promote economies of production by continuous running and large scale productions?

XII.—Proportion of different Elements of Cost.

43. How far do the figures supplied relating to the proportion of the different elements of cost apply to the practice in this country?

XIII.—Relative Cost of Production in Great Britain and Foreign Countries.

44. How far do you consider the figures supplied bear upon the cost of production in this country and others are accurate?

XIV.—Experience of different forms of Foreign Competition.

What facilities are enjoyed by foreign competitors arising from the effect of trusts, kartells, &c., or bounties (dumping); whether also their system of commercial travelling is superior (see Consular reports).

XV.—Effect of Foreign and Colonial Tariffs.

(a) The obstructive effect of tariffs.

(b) How far foreign tariffs tend to the efficiency of production in foreign countries by securing the home market.

(c) How far the Free Trade policy is a condition precedent to the success of the Tariff policy of foreign competitors.

(d) How far the Tariff policy of foreign competitors promotes continuity in running and the general efficiency of organisation of the industry.

XVI.—Conditions of fair Competition.

XVII.—Rates of Duty suggested.

[Questions arising out of the Forms.]

XVIII.—Incidence of Duties.

(a) Necessity of getting some measure of the volume of external and internal trade.

(b) Possibilities of expansion of the British home trade.

XIX.—Effect of such Duties on Prices.

XX.—Possibilities of expansion.

XXI.—Experience of Colonial Preference

XXII.—Decimal system.

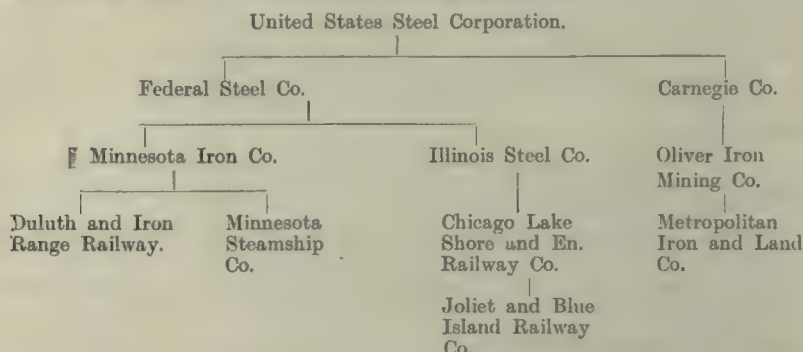
SECTION XII.—MEMORANDA.

(A) RECENT DEVELOPMENTS IN THE UNITED STATES IRON AND STEEL INDUSTRY.

A valuable and thoroughly comprehensive account of the present position of the Iron and Steel industry in the United States is contained in a series of three lengthy articles published in "Schmoller's Jahrbuch" for 1903 and 1904, by **HERB L. GLIER**, on which the following very brief summary is based:—

Mr. Glier commences with a detailed account of the complicated series of events and commercial struggles between rival steel companies, which resulted in the formation of the famous Steel Corporation of the United States, controlling, under the same administration, all the processes of production—from the mining of the coal and ore to the manufacture of wire and tubes—and of the transport and ultimate distribution of their materials and products. So great has been the influence of this Corporation, that, it is stated, no concern could contemplate the making of wire or tubes unless it is prepared to make its own sheet, and even its own pig iron.

The United States Steel Corporation resulted from the amalgamation of a number of small trusts, and occurred in three well marked stages. First, seven companies with a capital of £41,500,000 in preferred and £48,000,000 in common stock, combined and obtained Mr. J. P. Morgan and Company's option on Mr. Carnegie's interest in the Carnegie Company; two other companies with an aggregate capital of about 13 million sterling joined subsequently. The relations of the Corporation with the various companies which it absorbed, and which these had in turn previously acquired, is explained in the appended tree:—



Mr. Glier next goes on to discuss some of the earlier trusts which had existed in the United States.

Rail Association.

The oldest and most important association in the industry was the Rail Association. In 1887 the Rail Pool was formed, consisting of 13 members with shares or allotments ranging from $1\frac{1}{2}$ to $13\frac{1}{2}$ per cent. (Carnegie), the articles of association binding them to restrict their sales and the product of steel rails of 50 lbs. and upwards to their allotments. The sales of the Pool amounted to 12,000,000 tons in 1888. Considerable developments followed in 1889, when the Carnegie and Illinois Companies absorbed parts of the Trust and reduced the membership to nine, increasing their respective allotments to 21 and 31.6 per cent. Further absorptions followed in 1890, resulting in the combined allotments of these two Companies being raised to 59 per cent., and at the same time a penalty clause of 6s. per ton, for each ton sold above the allotment percentage, appeared for the first time. This pool broke in 1892 in consequence of the Carnegie and Illinois Companies claiming a higher allotment, and the former Company wishing to be relieved from an agreement with regard to price. This last had been a considerable cause of friction, and had led to many glaring evasions.

The Beam Pool.

The Beam Pool was dissolved in 1892 in consequence of the withdrawal of Carnegie, whose Company was then able to produce as much as the rest of the pool had to divide.

Mesaba Range Ore Pool.

The discovery, in 1891, of rich deposits of iron ore on the shores of Lake Superior led to the formation of a number of mining companies for their exploitation. In 1893 an amalgamation of the mining and transport interests followed, and Rockefeller, the owner of the richest mine and of a steamship and railway line, joined the syndicate. The policy of the syndicate aimed at maintaining a standard of prices which should preclude the possibility of competition by the deep hard ore mines. Rockefeller's means enabled him to go on mining and transporting his ore to Cleveland, where large stocks were allowed to accumulate, to be used against all attempts at raising prices.

Carnegie-Rockefeller Deal.

The price of Mesaba ore at the mines fell from 10s. 3d. per ton in 1892, to 3s. in 1894, and stood at 5s. 9d. in 1901, as compared with 9s. 2d., 5s. 6d., and 9s. 4½d. respectively, for the average prices in Michigan during the same years. Lake Angeline ore, one of the best Bessemer ores, fell from £1 0s. 2½d. in 1892, to 12s. 1d. in 1895. Such falls in prices led to the extinction of many of these mining companies, and were acquired by Rockefeller or Carnegie. A pool was formed—known as the Mesaba Range Ore Pool—agreeing to an output of 10½ million tons, and having for its main object the prevention of prices being kept down by Rockefeller. Carnegie then concluded his famous "deal" with Rockefeller, which resulted in an agreement that the latter should not actively engage in the manufacture of iron and steel. The purchase price was £125,000 in cash, and a royalty of 25 cents per ton. In return Carnegie, owning five-sixths of the Oliver Mining Company, undertook to sell none of that ore, and bound himself in severe freight contracts. Carnegie thus became possessed of the best Bessemer ore in the States (iron 64.18, phosphorus 0.043), delivered at his Pittsburg works at 12s. 1d. per ton. He now had the cheapest coke (through the Frick Coke Co.), the best organised works, an excellent geographical situation, both for railway and canal communication, and felt himself sufficiently powerful to renounce the Rail Pool and ignore the Iron Association.

The writer of these articles next goes on to recount the result of this dominating control by Carnegie, with the consequence of the absorption in a single trust.

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The larger trust movement began in 1898. The first impulse in this direction was given in 1889 by the combination of two Chicago steel companies and a rolling mill. From this beginning sprang the Illinois Steel Company, the founders of which—actuated, probably, by fears of the law—repudiated all suggestions of a trust, and claimed for the new venture a purely business undertaking on an extended basis. Shares were allotted only to the extent of the actual assets; no allowance was made for goodwill; and no regard was paid to the division of stock into preference and common shares. The new Company possessed 15 furnaces, 4 steel works, and nine converters; gave employment to 10,000 men; and rails formed the staple manufacture. The Illinois Company proved commercially successful during the early nineties, declaring cash dividends of 5 per cent. per annum in 1892 and 1893, and a bonus of 13½ per cent. in the latter year. Though the output did not reach the maximum capacity of the works, yet even then it exceeded that of most European countries. In 1893, the United States passed through a very severe crisis, entailing a reduction of employees in the Illinois Company's works of 50 per cent., and of wages of 24 per cent. Carnegie believed in keeping his works going at all costs, and accepted orders regardless of prices. This policy the Illinois Company imitated to a small extent.

Illinois Steel Company.

A change followed when J. W. Gates assumed the leadership in 1895, but the prosperity of the Company showed considerable fluctuations, and for the nine years previous to 1898, when the Illinois joined the Federal Steel Company, the average profits amounted to not more than 4 per cent., and even this had, for the most part, not been received in cash. It is claimed, however, that if the Illinois Company had owned their own mines, a better tale might have been told.

The price of ore is, in the United States of America, fixed early in the year for delivery during the navigation season (May—November), and this price is maintained throughout the year. Steel companies have consequently to accumulate stocks of ore in November to last them until May, at prices fixed in the preceding January, while their own goods are subject to fluctuating prices. On this account alone, the Illinois wrote off, in 1893, over £300,000.

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The causes which led to the formation of trusts in the United States are summarised by Mr. Glier, as follows:—

(A) The pools in heavy goods had been failures. Carnegie had, in turn, destroyed them all; without him no such combination could exist. Individual concerns were therefore driven to follow his example.

Causes tending to formation of Trusts.

(B) Other branches of the industry had a similar history. In 1890, the United States had not yet produced a single ton of tin plate; the production in 1894, 1896, 1898, was 74,260, 106,362, and 326,915 tons respectively. The output threatened to exceed the demand, and prices fell accordingly (from 18s. 1½d. per case to 11s. 5½d. in 10 years). One company could not control all the resources and processes of production, but a dozen or so could, and consolidations, similar to those already described, naturally followed.

(C) In the United States most business concerns are in the form of companies, and owing to the rapid business fluctuations few individuals care to incur heavy liabilities, and the shares are often concentrated in a few hands. Control is thus easily attained. The same individuals are often the directors of several companies. Add to this the activity of the American people, the low priced shares, and the readiness with which they change hands, and we have a series of facts tending in the same direction.

(D) Legislation also hastened the movement. The Sherman Act had declared that "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states, or with foreign nations is illegal." Consequently no member of a pool could bind another, and it is at least open to doubt whether any one of the agreements on prices were ever loyally adhered to.

(E) Then there are characteristics in the industry itself tending towards the same end. There is a certain uniformity in its products; it is not subject to changes of fashion or taste, and business is always done in large quantities.

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The Moore group of trusts consists of five distinct combines for the manufacture of certain semi-finished products. Four of these are now absorbed in the larger United States Steel Corporation, and the fifth will no doubt follow shortly. The first of these is the American Tinplate Company, which comprises 95 per cent. of the American Tinplate Manufacturers, and has a capital of \$18,000,000 in preference and \$28,000,000 in common stock. It contains 23 companies, having 250 mills.

The Moore Group.

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American Tinplate Company.

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The second of these combines is the National Steel Company, which consists of eight works, producing 133,000 tons of pig iron and 180,000 tons of steel per month. They control three iron mines, purchased a coalfield of 1,200 acres, and formed a coke company. This company manufactured only semi-finished products, none of which found its way to the consumers. They had practically but three customers, all closely allied to them. Of the 15 directors of companies in the tinplate and steel combines, nine were identical, giving them a three-fifths majority in each concern.

The National Steel Company.

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The third combine comprises eight companies, and is controlled by 15 directors, nine of whom were on the board of either of the first two, or both. They made hoops, bands, cotton ties, &c., purchasing their raw material from the National Steel Company.

The American Steel Hoop Company.

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In consequence of the high price which Moore fixed for sheet bars, the American rolling mill owners combined in 1900. Twenty-one companies, owning 155 mills, joined the American Steel Sheet Company. In 1902 the number of mills had increased to 164, of which 48 were in the neighbourhood of Pittsburgh. The capital of the new company was \$26,000,000, of which \$10,000,000 was reserved for the purchase of new concerns. This important combination had the effect of securing to the National Steel Company the control of the entire steel production, and to these companies an unfailing supply of the materials they required.

The American Steel Sheet Company.

In each of the above four companies—commonly known as the "Big Four"—a clear division was maintained, and the market of each was reserved and not interfered with. Of the 60 seats on the four directorates, no less than 40 were filled by 12 individuals.

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The fifth company in the Moore Group was the American Can Company. This comprised 85 per cent. of the canners, and had a capital of \$44,000,000. Directors of the "Big Four" secured 12 out of the 20 places on the new directorate, and in all the five companies, nine individuals filled 41 seats out of a total of 80. The total capital

The Canners.

of the Moore Group amounted to \$123,000,000 in preference and \$143,000,000 in common stock. Allowing for "watering," it is estimated that there still remained a net capital of \$100,000,000. Though each concern was independent, the closest union subsisted between them. Perfect harmony prevailed among the members of the Association. Each directorate knew precisely the wants of the other, and worked into its hands.

107 *contd.*

Financing the Trusts.

In his second article, Mr. Glier proceeds to explain the complicated tangle by means of which the American trusts are financed. He points out, in the first place, that the United States Steel Corporation has adopted a conservative policy, and despite its over-capitalisation, has refrained from raising prices. It resisted the temptation to raise prices, and has generally sought salvation in increased production.

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Over-capitalisation.

It is explained that the question of over-capitalisation centres round the preferred stock only. As a rule, not a dollar has been paid up on the common shares, and no loss would be incurred if they were decimated or entirely written off, though the outcry against such a proceeding might be considerable. They have no real foundation, merely representing a claim to a share in the profits in a good year, but not until the bond and preferred obligations have been discharged. Hence it would be fallacious to estimate the capital of any American concern by adding the preference and common stock together. Common stock merely represents a certain amount of goodwill, and hardly ever any real assets. When business is brisk, common stock secures a dividend; in times of depression they become mere paper. The trusts cannot conceal the fact that it is impossible to derive profits from a non-existent capital, especially as competition prevents them demanding exorbitant prices for their goods. The cry of over-capitalisation of the trusts is somewhat exaggerated. The Stock Exchange acts as a regulator, and presses the "water" out again.

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Effect on Export Trade.

It would be a mistake to suppose that this over-capitalisation damages the American exporting capacity. No one expects that the Steel Corporation will pay a dividend on its common stock every year. Americans are not unaccustomed to dividendless years, as for instance, in the period 1896-8, yet the exports increased enormously. A revival of trade after a period of crisis often enables a company to make good the arrears of years. The same conclusion, viz., that over-capitalisation does not diminish exports, is forced upon us by the fate of those who hoped to compete with wire, tinplate, and sheet steel companies. They had hoped that the "watered" stock would compel trusts to carefully protect their whole industry, but in 1902 the trusts so manipulated prices, that steel commanded a very high price and the completed product a very low price, enabling them by these means to diminish the competition of outsiders.

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Cash Reserves.

The confused ideas relating to Preferred and Ordinary stock current in this country have resulted in misunderstanding the financial conditions of the trusts. But Europeans have over-estimated this inflation of capital. Another belief prevalent on this side of the Atlantic is the supposed scarcity of liquid cash and reserve funds, with their consequent lack of working expenses should consumption of their products decrease. This would compel them to "dump" their goods on the European market at any price in order to obtain a supply of ready money. The view that English banks refused to participate in these undertakings for the above reasons must also be corrected.

111

It is not correct to assume that no real capital is brought in on "trustisation" of an industry. The Federal Steel Company, at its formation, received from the amalgamating companies over 15 million dollars in cash and over five million in bills, &c. Similarly, the Wire and Tin Plate Companies received 16 million and 4½ million dollars in cash respectively, and the National Tubes Company over 15½ million in cash, bills, accounts receivable, Government and municipal bonds, payments for ore, &c. This Company had so much cash on hand, that they invested about 3,000,000 dollars in Government stock bearing only 3 to 4 per cent. The Steel Corporation, embracing 10 companies (including the four mentioned above), received, at its formation, 25 million dollars in cash from the promoters. Its assets in 1901, as shown by its balance-sheet for that year, included cash, bills, and accounts receivable, amounted to nearly 103.5 million dollars, by the next year this had increased to nearly 110.5 million. The business of the companies have been put practically on a cash basis. About 70 per cent. of the total current monthly accounts due from customers is collected within 30 days. Its position enables it to feel the pulsations of the market, and it is believed that in any crisis that might subvene, it would suffer less than the 12 sub-companies did when they were independent.

Mr. Glier thinks that the contention that a want of ready cash will hamper the operations of the trust, and compel them to a policy of "dumping" cannot, therefore, be maintained, for, in addition to the cash in hand and at call, the Steel Corporation makes an annual net profit of over 13 million dollars from transport business.

The United States Steel Corporation.

The United States Steel Corporation owes its foundation to Messrs. J. P. Morgan and Carnegie.

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Its formation is the result of the development of the iron industry in the States and the control of all the processes of manufacture by the leaders in the trade. A conflict between producers and consumers of semi-finished products followed. In 1900, before this struggle began, their position was as follows:—

(A) The Federal Steel Company, Chicago (founded by Morgan), owning ore and coal mines, steamers railways, furnaces and rolling mills. Rails were their principal product, but they also manufactured semi-finished products for the open market.

(B) The American Steel and Wire Company, New Jersey (founded by Seligman and Co.), owning iron and coal mines and steamers. They were about to start furnaces and rolling mills, a proceeding tending to disturb former friendly relations with (A).

(C) National Tube Trust (Morgan) having to purchase its raw material in the open market.

(D) American Bridge Company (Morgan), including all bridge-building businesses.

(E) National Steel Company (Moore), owning iron and coal mines and furnaces; they manufactured rails and supplied semi-finished products to:—

(F, G and H) American Tinplate, Steel Hoop and Sheet Steel Companies (Moore)

The foregoing eight concerns had an aggregate capital of 249 million dollars Preferred and 271 million dollars common stock, and were firmly supported by powerful financial groups. But Carnegie was stronger than all these combined. So long as he remained outside and competed against them all amalgamation was impossible. At the end of August, 1900, a meeting took place at Skibo Castle, which was followed by a threat by Carnegie in January, 1901, that he intended to invade the tube and sheet steel trades. Works were to be erected on the Erie

a mile long, and all the processes of manufacture, from the smelting of the ore to the exportation of the finished product, were to be concentrated in them. These were also to include 20 fifty-ton furnaces of the Siemens-Martin type, and a gigantic railway along the sea coast should serve the huge undertaking.

This move threw the whole trade into confusion, and business was almost at a standstill. The transactions between Carnegie and the Pressed Steel Car Company suggested a solution of the difficulty. When the former had commenced the manufacture of axles and the construction of wagons, the latter staved off this competition by agreeing to purchase their supplies from him at a price adjusted to the current rates of pig iron and plates. This arrangement failed, as had a similar attempt by Moore and Frick. Morgan's success testifies to his superior ability. He was driven to form the Steel Trust to ward off the attacks of Carnegie upon his own interests; hence it is the latter who is responsible for the formation of the Steel Trust. Carnegie's submission conferred a boon upon the whole community. Had he persisted in his original intentions, a price-cutting war would have ensued, bringing in its train over-production and depression.

In the foregoing we have attempted to prove that the trust did not originate in the fertile brain of the promoter. It had been rendered inevitable for two reasons—(1) to save the industry from the evils of excessive production, and (2) to bridge the gulf between producers and consumers of semi-finished products by combining their interests. These huge companies were not formed to eliminate competition. Self-sufficiency is the end aimed at. It only purchases about 1½ million tons of pig iron per annum, and only about 40 per cent. of its Lake Superior ores are carried on railways not owned by them. This absence of conflict in the various stages of production is the Corporation's advantage over competition, an advantage transferred by this superior organisation to the American iron and steel industry as a whole. That the Corporation is the result of a compromise between the separate groups or branches of the industry is further demonstrated by its directorate. This shows it to consist of the "residuum," so to speak, of the development through which the trust movement passed in the period 1897-1901.

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Mr. Glier then proceeds to describe the capitalisation of this great Corporation. He points out that it is somewhat difficult to ascertain the exact truth in this matter. In 1902 the Corporation's liabilities were:—

Capital of the Corporation.

Corporation Bonds, 301,059,000 dollars.
Bonds of the sub-companies, 59,654,000 dollars.
Preferred stock, 510,281,100 dollars.
Ordinary stock, 508,302,500 dollars.

Its receipts were also on this enormous scale, averaging in 1901, 9,420,844 dollars per month; in 1902, 11,109,064, and in 1903 (six months only), 10,261,373. The principal assets are made up of shares in the sub-companies, seven of which account for 217,086,000 dollars, and 239,984,000 dollars of its preference and common stock. These amounts were exchanged for 261,722,000 dollars preference and 269,721,000 ordinary corporation stock. Schwab accounted for these unexpected increases by stating that the amalgamating companies had considerably increased their assets since their formation. In addition to this the Corporation took over some 42 million of the unsecured liabilities of its members.

In addition to the seven companies already mentioned, there were included subsequently in the Corporation, (A) The American Bridge Company; (B) The Carnegie Company; and (C) The Lake Superior Consolidated Iron Mines. It is said that, on the whole transaction, the underwriters and Mr. Morgan pocketed no less than 50 million dollars.

Mr. Glier proceeds, in the third and last article of the series, to discuss the relation between the United States Steel Corporation and the Iron and Steel industry generally. He points out that far from monopolising the whole American output, the Corporation in 1901 and 1902 produced only just more than 40 per cent. of the pig iron in the United States. In 1902, the Corporation produced about 66 per cent. of the American steel output, and more than 60 per cent. of the Bessemer rails.

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The Corporation is its own carrier of coal and ores; the transportation properties of the Corporation is valued, by Mr. Schwab, at \$80,000,000, after deducting \$40,000,000 of bonded debt.

Railways.

The total length of line controlled by the Corporation is as follows:—

Railways of the Corporation	..	..	..	..	767·84 miles.
Branches and spurs	..	..	..	..	259·27 "
Sidings	..	..	..	..	471·56 "
Total	..	..	..	..	1,498·67 "
Operated under trackage rights	..	..	..	..	178·02 "
Second tracks	..	..	..	..	139·45 "
Total	..	..	..	..	1,816·14 "

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In 1900 the Steel Corporation owned 112 vessels, formerly owned by the following companies:—

Steamers.

	Steamers.	Tonnage.
(1) Bessemer Steamship Company (formerly belonging to Lake Superior Iron Mines, i.e., Rockefeller)	59	2,500-8,000
(2) Minnesota Steamship Company (Federal)	22	3,500-8,000
(3) Pittsburgh Steamship Company (Carnegie-Oliver)	12	5,000-8,000
(4) American Steamship Company (Steel and Wire Company)	13	5,000-8,000
(5) Mutual and Menominee Line (National Steel Company)	6	..

The business on the lakes is carried on under the name of the Pittsburgh Steamship Company. Yet this fleet is not large enough for the Corporation: it only provides the means of transporting some 10 million of the 16 million tons of ore mined. Hence an announcement was made in 1902 that 20 steamers were to be built, each capable of carrying 9,000 tons. Each of these was calculated to accomplish 19 voyages per annum, thereby carrying over 3½ million tons of ore in a year. This, however, does not represent the increased efficiency of the Corporation's

fleet, since many of their vessels are old and unfit for further service, and must be replaced. But the Corporation are approaching the day when they will cease to transport their ores across the lakes in any steamers but their own.

115 *contd.*

Dock Arrangements.

The Corporation further economised time and expense by the abolition of waiting at the docks. The vessels are loaded or unloaded as they arrive; any boat can take any kind of ore, enter any dock available, and its destination need not be assigned to it until it has moved out of the harbour and made way for another boat. A saving of time and freight is effected, steamers accomplish more voyages in the season, and always have a full cargo. Again, whereas formerly each individual company could not own the particular mine that would enable them to make the best mixture for the respective qualities of iron and steel, by the consolidation of all interests, it is now possible to group these mines as one, to take the ores from the various mines to the works best suited to make the ideal mixture, to do it at the least cost and to produce the best article.

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The Pittsburgh Steamship Company, domiciled in Duluth, controls the whole of the Corporation fleet. To grasp the magnitude and efficiency of the organisation required to ensure smoothness of working, it must be borne in mind that, in a season of 220 days, the Corporation transports 16 million tons of ore, or an average of nearly 73,000 tons per day, or 5,000 tons per vessel. This involves the loading of 14 boats per day on Lake Superior, and the discharge of a like number per day at Chicago or the ports on Lake Erie. If we further consider that not every furnace requires the same kind of ore, or the same mixture, we shall see that 36 trains (of an average capacity of 2,000 gross tons, *i.e.*, 45 fifty-ton wagons) are required daily at each end.

In winter this enormous fleet remains in absolute idleness, hence it is possible that in less prosperous years it may carry large quantities of steel to Europe. The only additional expenses would be increased cost of insurance, wages and coal, but the latter the Corporation itself supplies. Moreover, the hundreds of wagons that daily return empty from Pittsburgh to Conneaut Harbour are available for transport of coal and steel for shipment at this port. Carnegie experimented with three ships *via* the Welland Canal and Montreal.

Since November 30th, 1903, the railway companies have reduced their rates for exports. The postponement of this concession for so long is an indication that the Corporation has not yet attained to that complete control over the railways generally attributed to it.

On the lakes the Corporation hold every record for ore, maize, oats, hard and soft coal. As they have carried enough ore in 1902 to supply their works until August, 1903, they can now turn their attention to cereals and coal cargoes—a source of income to be reckoned with in years of slackness in the iron trades.

The extent of the growth of ore transport on the Lakes may be gathered from the following figures. During 1890-99, the average tonnage dealt with was 10 million tons; during 1900-02, the average has risen to 22½ million tons. It is estimated that the total ore in sight in this region is 1,000 million tons; hence, at the present rate of consumption, exhaustion would follow in 45 years.

The last three years have witnessed considerable developments in the methods of unloading vessels. In the Carnegie docks at Conneaut Harbour three Hulett ore unloaders have been erected, in South Chicago Hoover and Mason unloaders are employed. Both appliances effect a saving of human life. Formerly 18 cents per ton were paid for discharging iron ore, of which 10 cents were absorbed by the ore shovellers, whose trade union was reputed to be the most arrogant, and at times the most unreasonable of labour organisations. The three Huletts discharge from 12,000-15,000 tons per day of 8 to 9 hours, or about 1,700 tons per hour. Mr. Hulett, the inventor, receives a royalty of one cent per ton. To this we must add depreciation and interest on capital, which account for another 7 cents per ton; in other words, the cost of unloading a ton of ore is now 8 cents instead of 18 cents. Further efforts are made to abolish the use of hand labour and the interference of the men's union it involves. Arrangements have been made by which the hatches have been enlarged and a greater number of openings in the side of the ship made so that very little of the ore has to be shovelled, and that is often left to the end of the season. In fact, when the experiment was made with the Hulett unloaders, it was found that about 5,200 tons of the 5,500 tons of the cargo could be discharged by this method. The Hoover-Mason system is even more efficient; 26 men are now doing the work of 150. The machines have in four hours raised from one hatch 540 tons—the total cost only amounted to 8 dollars. In September, 1902, 6,000 tons of ore were unloaded in 6 hours; in May, 1903, 5,400 tons in 5½ hours; whereas in 1893 it took 10½ hours to unload 4,800 tons.

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Only a careful study of the transport system by sea and land will explain why Carnegie was able to sell a ton of Bessemer in 1897 for 9 dollars (in 1885 it had cost double), and yet make a profit. The study of this marvellous development is as of much importance in obtaining a correct idea of the American iron and steel industry as the proper understanding of the industrial processes themselves. An immense increase in the efficiency of the railways has been accompanied by a corresponding reduction in freightage. The average trainload has risen from 175 tons in 1890 to 296 in 1902. (The New York Central averages 750 tons, German coal trains average 550.) The Illinois Central, along the banks of the Mississippi, has reached a maximum of 2,000 tons; the New York Central of 2,400 tons (80 thirty-ton wagons), on account of their heavier engines (in 1881 weighed 102,000 lbs., in 1900, 250,000 lbs.). Since then the Union Railway (Carnegie) has acquired an engine weighing, with tender, 334,000; the Illinois Central, 365,000. Side by side with this we have the increased efficiency of the ore wagons. These now carry 50 tons each; and while in 1898 a Duluth Iron Railway train transported 19 27-ton wagons with a load of 410 tons, in June, 1902, 29 50-ton wagons and 56 27-ton, or a load of 2,700 tons, formed one train. Towards the end of 1902, the Leigh Valley Railway loaded a train of 104 wagons, carrying 4,013 tons. Fifty-ton wagons are now in great demand, and the Pressed Steel Car Company have had to extend their works. A 2,000-ton train requires a much heavier permanent way and stronger bridges than a 1,000-ton train, and their alterations are not yet complete. Nevertheless, the 50-ton wagon is coming to the front, so that whereas in 1894 1,888 wagons were required per 100,000 tons, in 1902 1,288 sufficed for the same quantity.

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Mr. Glier goes on to express the opinion that the Corporation will benefit much more than any of their opponents by any reduction in the cost of carriage. They can manufacture pig iron at Pittsburgh two dollars per ton cheaper than anyone else on account of their cheaper transport. Thus, while the costs are to "outsiders" 80 cents from mine to dock (Mesaba to Duluth), from Duluth to Cleveland 85 cents, from Cleveland to Pittsburgh 1.15 dollars, the Corporation pay 65, 50 and 65 respectively, saving a dollar per ton, and estimating one ton of pig iron to two of ore, we arrive at the figure just mentioned. Cheap pig iron means cheap semi-finished products. The Bessemer Lake Erie (203 miles) train load averaged 913 tons in 1902-3, the average carriage from 419 per cent, per ton per mile, or 69 cents from Cleveland to Pittsburgh for "outsiders." The Pressed Steel Car Company form

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Ore Unloading Arrangements.

Economy of Transport.

Pressed Steel Car Company.

a valuable support to the Corporation, and it may not be long before they are included in the trust. Already they are the largest consumers of steel in the world, purchasing their entire requirements from the Corporation. In 1897 they produced 501 cars; in 1898, 2,931; in 1899, 9,024; in 1900, 16,671; in 1901, 24,590; in 1902, 22,402. The last quantity is for ten months only, or 110 per day. In the beginning of 1903 they had increased to 120 per day; before the end of the year they expect to reach 130. They contracted in 1891 with Carnegie for the supply of 30,000 tons of steel plates per month for ten years, representing a transaction of 1,000,000,000 dollars, and requiring from 75 to 80 million dollars per annum. "The American Railroad Gazette" estimates in 1902, 141,267 wagons were built (exclusive of electric wagons) in United States of America, of which 15 per cent. were entirely of steel. In the same year the American Railways required 1,461,328 wagons (exclusive of those belonging to private firms), so that an immense field exists for the operations of the steel car companies, even if only 25 per cent. of the rolling stock of the States are to be of steel. The demand for heavier rolling stock, larger engines, and stronger bridges which is coming, will afford a fresh source of revenue for the United States of America's iron industry. Again, the lion's share will fall to the Corporation, through the Pressed Steel Car Company.

The immensity of the Corporation's transport business is well summed up by Mr. Dwight E. Woodbright in an article on "The Lake Superior Iron Ore Trade in 1902," wherein he says that the magnitude of these (transport) operations, carried on under a single control and by a single head leadership, is such that all economies in mining and transportation are exceeded, and a wonderful record has been made. Money has been saved by this work in amounts that would be large dividends for great concerns.

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In the last section, the author enters into the question of the comparative cost of production of pig iron in Germany and the United States, and avers, as a result of this examination, that Germany has no cause for anxiety. He states that Bessemer iron costs the Corporation in Pittsburg not less than 12 to 12½ dollars, and in less favourably situated works, 14½ dollars. He thinks that the Corporation could produce several million tons at less than 12½ dollars. In Alabama the cost was from 40s. to 44s. per ton in August, 1903. A reaction in the industry will lead to the concentration of mining in the open pits and the working of higher grade mines (half of the Mesaba mines are open pits), in the working of which improvements are being constantly made.

Pig Iron Costs in Germany and America.

On the question of wages, he states that one of the results of consolidation is that 40 to 45 per cent. ore can be worked instead of 55 per cent.; these, when mixed with high-grade ores, must lead to a further reduction in the cost. Labour and salaries in 1902 accounted for 27.84 per cent., or 120.5 million dollars. The average wages of miners rose 36 per cent. in five years. A reduction must take place. The workmen are mostly foreigners, not well organised, and habituated to a lower standard of life. The Tin Plate Company already deduct 5 per cent. of the wages and use it as a fund for paying premiums on re-exported tinplates. In the coke industry wages rose 50 to 60 per cent. from 1894 to 1903; in May, 1902, furnacemen received an increase of 10 per cent., dockers 20 per cent., railway men 10 per cent., and in the wire industry wages rose 25 to 33 per cent. from 1897 to 1901. Reductions will inevitably follow when business fails. The domination of the "Amalgamated" has been partly shattered by the Corporation, but in some of their tinplate, and in about half of their sheet steel mills, "Amalgamated's" limitation of output still rules. A saving of cost can also be effected in other directions. For instance, furnace slack, bye-products of coke, furnace gas for driving engines, can be utilised, and a saving in coal (at present wastefully employed) brought about. In these respects the States are far behind England and Germany.

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But, above all, cheap transport is the most important factor in the industry. To this the Corporation devote a good deal of attention, spending freely on maintenance, repairs and equipment of their railways, renewals and additions to their fleets, docks, &c. Here Europeans cannot keep pace with them. When technical improvements cheapen transport the benefit is divided between the business man and the railway company, the Corporation unite the two rôles.

Cheap Transport.

Nor must we infer too much from the fact that the Corporation included many inferior and antiquated works. Five years of trust operations (including the prosperous years 1899-1903) have altered this. In the first quarter of 1898 there were 173 furnaces with an average weekly output of 1,298 tons each, at 10.10 dollars per ton in Pittsburg. By the second quarter of 1903 there were 294 furnaces, with a weekly output of 1,282 tons, at 20.33 dollars per ton, and in the last quarter of 1903, 216 furnaces with 1,337 tons, at 15.00 dollars per ton. The profits were such, that 6 per cent. to 8 per cent. dividends could have been paid on the ordinary stock; the trusts preferred to pay 4 per cent. and spend the remainder on improvements. Hence the works have vast improvements to their credit. The object is to reduce the cost of production to such a pitch, that competition should be destroyed. The trusts themselves are better off financially, and otherwise are ready to cope with orders when the tide of business should set in.

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Lastly, there must be immense demands on the part of the railways for some years to come, though the facilities for the supply of rails have also increased. Since 1897, the railways have made extraordinarily large profits, and have disclosed a lamentable lack of railway accommodation, especially where most needed, in the iron and coal districts. This, together with the introduction of the 50-ton wagon previously mentioned, must lead to large orders from the railways. Already they are expending twice as much as in 1894. In many cases a complete change of equipment, stronger bridges, and heavier locomotives have been rendered necessary by the introduction of the new wagon. He arrives finally at the conclusion that the danger of "dumping" by the Americans into Germany is not very great, though it is possible they will meet in competition in neutral markets. Too much must not be built upon a reduction of output. The whole American system is based upon production on the largest possible scale; a fall in demand consequently presses much heavier in American works than on any others. To the Corporation it implies a diminution of the advantages it holds over others by its control of its transport system and its raw material. The development of the last decade (1891-1901) leads us to conclude that the United States of America are destined to be exporters, and not importers, of iron goods.

Railway Developments.

Carnegie's prophecy at the time of the Rockefeller deal, that within a year his company would transport one-third of their entire product to the other side, was practically realised; he also said, "Pittsburg to-day (1897) can make and deliver a ton of steel anywhere in the world at as low a cost as it can be made at the point of delivery." On September 1st, 1903, he said at Barrow-in-Furness that there have been made and sold without loss, hundreds of thousands of 4-inch steel billets at 3 lbs. a penny, or 60s. per gross ton. Schwab, in 1902, said that he could sell the same at 16½ dollars per ton. Allowing 6½ dollars for "conversion," we are left with 10 dollars for pig iron, a price that agrees with our former remarks. All assurances to the contrary notwithstanding, it

appears, therefore, that the Americans will, in 1904, enter the world's market with large quantities of iron, not indeed, that they will export thousands of tons per day, and kill the European industry at one blow, but they will try to get rid of such large quantities, even at a temporary loss, in order to disturb first the English, and then the Continental markets. It is too *naïf* to pretend that the 150,000-ton Harland and Wolff order did the Corporation no good. It represents 12 per cent. of the English production of plates and angles. It is the same as if the Corporation ordered 50,000-ton tin plates in Wales. In 1902, the United States of America produced as much pig iron as Germany, England and Belgium together. The United States of America are, therefore, again becoming exporters. This explains the recent formation of the United States Steel Products Company under the management of J. A. Farrel, whose business it is to organise the Corporation's export trade.

122 *contd.*

The contention that the shareholders will demand dividends cannot be maintained. Export began in the worst years, when high prices at home did not compensate for selling cheap abroad. Americans are not such dividend hunters as is commonly supposed. One example, and that a forcible one, should suffice to make this point clear. In 1901-02 and 1902-03, the American Locomotive Company cleared enough to pay 4 per cent. on its common stock, and 7 per cent. on the preferred, but only the latter was distributed; holders of the former stock received nothing. Whether the Corporation will do the same, and abolish Common stock dividends, and even reduce payments on the Preferred, depends upon the section that will secure control of its business. Should it be the men who can wait two or three years for a return from their investments, those who have other sources of revenue, and who are not affected by a temporary fall in the value of their stock, then a new era will begin for the Corporation.

Conclusion.

The above outlines the latest developments in the American industry. In order to realise it completely, an examination of the formation and development of the components of the Corporation and the effect of the protective tariff and the relation of Wall Street to the trust is necessary. Two questions of the utmost importance must demand an answer: (1) What became of all the pig iron produced in the United State of America since 1896? (2) Is there any prospect that the same channels of consumption will remain open and absorb the same quantities in the future? Further—is there, perhaps, an analogy between the development of the trusts as far as it has gone, and the development taking place in another branch of American social economy that might enable us to look into the future?

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Both questions merit detailed examination.

And lastly, what is a trust? Two different things have been so designated. The Federal Steel Company and the Tin Plate Company have both been called trusts, yet the former was merely a combination of interests to develop an industry; no monopolisation was intended. The latter aimed at combining a number of works to destroy competition. Americans themselves are not unanimous in their definition of the word. One defines it as a means of "snuffing out combination;" another as a "dominant combination of money, property, business, or commercial power or energy." Only in the latter sense can the Corporation be called a "trust," i.e., discarding the idea of monopoly. And in this sense there exist a number of such dominant combinations in Germany in shipping, electricity and coal mining. There is, then, no need to be frightened by the word "trust."

(B) SUMMARY OF EVIDENCE BEFORE THE UNITED STATES INDUSTRIAL COMMISSION ON THE IRON AND STEEL INDUSTRIES.

Points of Difference.

In any Memorandum dealing with the iron and steel industry, the points of difference between the English and the American conditions of trade must be borne in mind. It must first be remembered that in America the production of iron and steel in any large quantities is a development of very recent growth. This is sufficiently illustrated by the statistical tables already circulated.

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Secondly, it should be noticed that the position and management of these industries in America are on lines entirely different from our own. The individual company or manufacturer has now been merged in the combination. The existence of the United States Steel Trust was brought about by an amalgamation of a large number of companies, several of which were already Trusts in their own particular line of manufacture. For instance, the American Steel and Wire Company had, owing to their patents and other advantages, control over a very large portion of the output in America of their own product. No fair comparison, therefore, can be made between the British industry and the American owing to the difference in the system. In the year 1901, Mr. Schwab, President of the Steel Trust, admitted that his Corporation controlled between 65 per cent. and 75 per cent. of the output of steel in America. The industrial development of the United States has been largely assisted by the country's natural resources, and in addition to that tariff has played a most important part in stimulating home production. To exemplify this, the statistics of the tinplate industry need only be referred to, from which it will be seen that in 1891-2, the imports of tinplate amounted to 422,000,000 lbs., and the home product to 13,646,000 lbs., while in 1899-1900 the imports amounted to 147,000,000 lbs., and the home product to 667,000,000 lbs. At the same time, it is only fair to give the reasons which the United States Government Commissioners claimed for the superiority of their country in industrial production: they are, firstly, the character of the people; secondly, the physical condition of the people; thirdly, the skill and efficiency of the people as tool users; fourthly, the quantity and productivity of tools; fifthly, the effective organising of business for economising all productive and distributive forces. The Commissioners in their report add: "The conservatism of Great Britain and the comparative lack of ambition, and in some cases of education in other European countries, and above all their lack of freedom, social as well as political, often prevents their availing themselves of known and approved methods of tools and machinery." . . . "Our 'captains of industry' are quick, but sure in their judgment, self-reliant and of boundless energy; they are less conservative than their competitors abroad, more ready to seize upon improved methods, and to incur risks where there is a fair chance of conspicuous success."

The evidence given before the Commission was generally from the manufacturer's standpoint, who was, at the same time, a member of a combination. All the facts and evidence that follow must, therefore, be taken as representations from a Trust point of view, and this appears to be in America the natural point of view at the present time. First, it is to be noted that, according to the American census, the number of iron and steel establishments reporting was 1,005 in 1880; 645 in 1890; while the value of the products rose from \$236,000,000 in 1880 to \$430,000,000 in 1890. The figures for 1900 are even more striking, as while the value of the products rose to \$803,000,000, the number of establishments had increased only by 23 to 668. Therefore, while the productive capacity has nearly doubled, the number of establishments has remained practically stationary. In the opinion of most of those associated with the Trusts, the causes of combination were excessive home competition. The desire to lessen too vigorous a struggle, naturally brings men together. On the other hand, one or two witnesses urged that the high tariff, by shutting out foreign competition, made it easier for the manufacturers to combine to control prices; nearly all the witnesses, however, who consider excessive competition as the chief cause, do not agree that the tariff is to be looked upon as a cause, nor as a rule do they concede that those engaged in the organisation of combination have any intention of securing a complete monopoly. In most cases they would deny that a monopoly was in any respect desirable.

The advantages of combinations are dwelt upon by most of the Witnesses, and may be summarised as follows.—

- (1) The regulation of production—the danger of over-production is avoided. (Few of the Witnesses would admit that they could control the output to a very large extent.)
- (2) The necessity of only carrying small stocks of goods. This saving capital, insurance, &c.
- (3) The control of production enables the combination to keep its factories running full time, thus having labour fully employed.
- (4) Combination facilitates the standardisation of goods.
- (5) It leads to a specialisation of men and machinery.
- (6) This reduces the cost of superintendence and labour.
- (7) The number of travellers can be reduced.
- (8) Sales can be made direct without the intervention of the middleman, and advertising can be made cheaper and more effective.
- (9) A combination has a better knowledge and control of credit conditions, so can guard against bad debts.
- (10) Customers can be supplied from the nearest plant, and freight thus saved.

In the earlier evidence it appeared clear that some of the combinations worked together in order to supply each other with cheaper raw materials. For instance, owing to the close connection between the American Tinplate and the National Steel Company, the former could buy steel at more reasonable rates than an outsider. It is, however, noticeable that since the organisation of the United States Steel Corporation it has priced Lake Superior ore at 5s. a ton less than in 1900. The Corporation owns 80 per cent. of the ore and can practically fix the price for the general market. It is commonly believed that the combinations will find it to their interest and also within their power to prevent, to a considerable extent, either speculative advances or reductions in the prices of raw materials.

Previous to the formation of the United States Steel Corporation most of the Iron and Steel Companies claimed that they made no attempt to control a large percentage of the output, that they made no approach to a monopolistic power, but secured their advantages by bringing together different branches of the industry, which ensured them a steady supply of raw material or a sure customer for their product. Thus the Federal Steel Company controlled, possibly, some 30 per cent. of the output of its main product, but continued the process from the mines to the finished article. As mentioned, however, above, the United States Steel Corporation itself admitted that it controlled between 65 per cent. and 75 per cent. of the steel industry of the country. "In very prosperous times," the President added, "the percentage would probably be smaller; in very dull times it would be much larger."

The testimony of substantially all the combination men is to the same effect, that unless a combination has either some natural monopoly of the raw material or is protected by a patent, or possibly has succeeded in developing some very popular style or trade mark or brand, any attempt to put prices above competitive rates will result eventually in failure, although it may be temporarily successful. In the case of the iron and steel industry, the general impression seems to be that so far, at any rate, it has not been possible for the combinations to maintain prices materially above what the market conditions would justify. The very great increase or decrease in the price of iron or steel seems to be due rather to other causes. Mr. Butler says, for example, that the extreme fluctuation, to which the iron and steel markets have been subject, seems to be due largely to the fact that the middlemen, whenever there comes an increased demand, fear there is going to be a scarcity and so call for more than they really need. In order to meet this apparent demand and check it, the output is increased and prices are raised beyond what would otherwise be justified. When at length it is found there has been over-supply made ready for the market, prices begin to fall, and these same middlemen, fearing they will be caught with too large stocks on hand, cut prices until they fall below what the market conditions would justify. Witnesses agreed that while prices might be kept at rates sufficient by virtue of the economies of combination to pay reasonable or even considerable profits, any attempt to secure extortionate prices would defeat itself by promoting competition. Prices advanced very rapidly in the iron and steel and allied industries in the last year or two. While it is probably true that the combinations have been able to seize the advantages of the situation better than could smaller manufacturers, there can be no doubt that the main increase in price has come from the most unusual demand. All the witnesses in those lines seem to agree as to the increase in demand, and as to the fact that it, with the corresponding increase in the price of raw materials, was the chief cause of the increase in the price of the finished product. The success of great combinations as chief manufacturers depends, the officers claim, upon a cheaper cost of production than that which their competitors possess.

Mr. Guthrie, President of the American Steel Hoop Company, believed that owing to the country's superior natural advantages under ordinary circumstances it would even now be possible for a large part of their product to be sent abroad. At the time he gave evidence (1899) comparatively little was exported, owing to the enormous home demand, but he believed that they had the opportunities and facilities for manufacture which would enable them to export large quantities. As an example, he quoted the price of coal at Pittsburgh at \$1.50 a ton, while he said England's price for coal was \$4.50, and for coke \$5.50. He added further that the ore cost less and the transportation rates on the great Lakes were lower than anywhere else in the world. He was perfectly confident of being able in ordinary times to keep up American wages and beat the Englishman in his own

market. At the same time, he added, the large capital of combinations made it possible to employ agents all over the world and to spend large sums in pioneering. A similar opinion was expressed by Mr. Gates, Chairman of the American Steel and Wire Company. He stated that he started an office in London in 1893, and at that time the annual expenses of running that office was £1,500 a year. In the year 1899 the cost of operating the London office was £15,000 a year, and he was doing an average business in London of from £3,000 to £4,000 a day. He further stated that the wages he paid his workmen was 60 per cent. to 85 per cent. higher than the wages paid in Europe, and that, with the exception of rent, the American cost of living for the working man was no higher than the European.

As regards the relation of export prices to domestic prices, the statement is at times made that the two have comparatively little relation one to the other, inasmuch as different conditions are met with in the different lines of trade. It is conceded that it is frequently true that export prices are made lower than domestic for the sake of securing the trade. It is claimed, however, that no disadvantage has come to the American consumers nevertheless, because when the foreign market had been once secured the continuous full operation of the plants with the increased output reduces the cost of the entire product. Were it not for the export trade there might at times, it is conceded, be somewhat lower prices for the domestic market, but only under conditions that would result in a temporary check to production, and, on the whole, the result would be a higher average of domestic prices. In certain instances the export trade comes from the peculiar character of the product itself, and has little to do with the matter of prices or with the power of a large combination. The fact seems established that great capital aids much in extending the export trade. Great capital does not necessarily imply monopoly.

To show the variations between the export and domestic prices, Mr. Schwab stated that during the last year, 1900, the Corporation exported certain grades of steel at about \$23 a ton when the price from the same goods at home was \$26 to \$28 a ton. The reason for the lower prices was that it was desirable to keep the plants running the full capacity. The home demand was not enough to do this. He said that this custom had been general amongst steel manufacturers in circumstances of this kind. Further, if plants were not kept running their full capacity, the cost of production would be so much increased that the price for the home consumer would, on the whole, be higher than if these export goods were sold at a lower rate. He considered the working people the chief beneficiaries of all measures to increase the export business. "And," he added, "I think you can safely say this: that where large export business is done nearly all the people from whom supplies are bought for that purpose give you a good price for the materials that go into export. Railroads will, in most instances, carry them a little cheaper for you, and so on all down the line. But labour within my knowledge has never been asked to work for a lower price for export material, so that labour benefits more by it than any other interest." Generally, the representatives of many of the combinations assert that they have made special efforts to increase the export trade, and they consider the development of that trade one of the chief advantages to the country from the combinations.

Export Prices and the Tariff.

In the earlier evidence the Presidents of the Steel Hoop Company, the National Steel Company, and the Federal Steel Company all agreed that some tariff was still needed for the proper protection of the various steel industries. It appeared that without the present tariff on steel some of the companies could not compete, say in Texas, on account of the extremely low freight rates from abroad. Protection, it is said, was needed to offset transportation rates, and still more needed because the Germans, it was stated, got a subsidy on exported steel and were doing all they could to push their export business.

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Regarding the tariff on tinplate, there seemed to be no difference of opinion among the Witnesses. It was agreed that there would have been no tinplate industry had it not been for the tariff. Mr. Reid says "while the tariff at present gives efficient protection, the removal of the duty would destroy the industry." Mr. Griffiths, the most active opponent of the tinplate combination, testified that the tariff was in no sense the father of the combination further than that the entire industry was created by the tariff. Several American free traders were of opinion that the average high wages were not the result of the tariff, but rather the productive power of the country, and that the lowering of the tariff would not result in a general lowering of real wages. Evidence was given to the effect that the European manufacturers treat the United States as a dumping ground for their surplus and make prices for export to America far below their domestic prices. For that reason the retention of the tariff was advocated, and certain instances of dumping of glass were given. Most of the manufacturers, including all the Iron and Steel Witnesses, were in favour of this retention to prevent dumping. Mr. Schwab, however, thought that in certain lines, in which there is comparatively little labour employed, the tariff is no longer needed, and that it might be removed without detriment; but he and the other Witnesses were of opinion that in the case of manufacturers of higher grade in which there is much labour employed, a reduction of the duties resulting in European competition would necessitate a reduction in wages. In most cases the manufacturers were of opinion that so little damage, if any, was done by the tariff, that they would be unwise to take the risk of disturbing the present prosperous condition of the industry by a discussion of any changes in the tariff. The explanation of this remark is simple: in dull times dumping will be practised on a large scale by the United States Steel Corporation.

General Statistics.

13.—(1) Export of iron and steel, and manufactures of—

1890	..	..	..	..	..	..	..	..	..	..	\$25,542,000
1900	..	..	..	..	..	..	..	..	..	..	\$121,992,000

(2) Export of iron and steel manufactures to Great Britain—

	Builders' Hardware.	Sewing Machines.	Machinery.
1891	 \$616,378	 \$848,493	 \$2,036,000
1900	 \$2,156,661	 \$1,329,712	 \$10,620,000

(3) Proportion of domestic product exported—

	Pig Iron.	Steel Rails.
1890	05	10
1899	24	67
1900	 1.18	 15.30

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(c) THE ORGANISATION AND WORKING OF GERMAN KARTELLS.

The present organisation of the German export trade is of recent origin.

- 132** Out of a total number of 345 syndicates in Germany, in the year 1897, there were, according to Mr. Liefmann's estimate, 80 in the iron industry and 15 in the metallurgie industry (excepting iron). The most important of these are :—
- (1) The Consolidated Pig Iron Syndicate.
 - (2) The Half-finished Goods Union (Halbzeug Verband).
 - (3) The Girder Syndicate.
 - (4) The Wire Rod Syndicate.
 - (5) The Plate Syndicate.
 - (6) The Drawn Wire Syndicate.
- 133** The Consolidated Pig Iron Syndicate has its head office at Düsseldorf. It represents three subsidiary syndicates : (A) the Rhenish-Westphalian Syndicate, of Düsseldorf, constituted in 1894 ; (B) the Association for the Sale of Pig Iron of the Siegerland, with its offices at Siegen, dating from 1896 ; (C) the Comptoire Lorraine et Luxemburg, dating also from 1896. The Consolidated Pig Iron Syndicate in its present form dates from 1897. Before that date certain agreements existed between the different producers, but as there was no way of really enforcing them, their provisions were easily evaded.
- 134** The Half-finished Goods Union existed in the year 1897 under the form of an association, the functions of which were exclusively to control the selling prices of their products. In 1898, the organisation assumed a more definite character. The headquarters are at Düsseldorf, and it represents the steel works of the Moselle, the Saar, Luxemburg, the Rhine, and Westphalia.
- 135** The Girder Syndicate has its head office at Düsseldorf, in the same building as the Steel Syndicate. It was constituted in the year 1899 and, like the Pig Iron Syndicate, comprised three sections : (A) the South German Girder Syndicate, founded in 1884, which is composed of the rolling mills of the Saar district and of Luxemburg, and has its office at Saarbrücken ; (B) the Girder Syndicate of the Lower Rhine and of Westphalia, with its head office at Düsseldorf, the operations of which extend to the north of Germany ; and finally, (C) the Peine Works, in Hanover, which supply that province and Eastern Germany.
- 136** The Wire Rod Syndicate, whose head office is at Hagen, Westphalia, dates from the year 1896. The Plate Syndicate has its head office at Essen. It was originally established in 1897, and assumed its present form as a limited liability company in 1898. The Drawn Wire Syndicate was founded in 1899. The office of the Association is at Hamm, in Westphalia. Its commercial functions are distributed over four districts, viz., North Germany and the north-west, with an office at Berlin, Saxony, Silesia, and, lastly, South Germany, with its bureau at Mannheim. The export business is attended to at Hamm.
- Other important syndicates are :—
- 137** (7) The German Rail Union (Die deutsche Schienengemeinschaft) sub-divided into western, eastern, and southern groups. It represents 24 separate works, among which it distributes government orders for rails.
- (8) United Upper Silesian Roll Mills (Die vereinigten Oberschlesischen Walzwerke).
- (9) The Union of German Heavy Sheet Mills (Verband deutscher Grobblechwalzwerke), with its head office at Essen. It represented, when started in 1897, 24 separate works.
- (10) The Syndicate of Light Sheet Mills (under 5 mm.) (Feinblechsyndicat), established in February, 1902. It is divided into many groups.
- (11) The Union of Wire Nails Manufacturers (Verband deutscher Drahtstiftfabrikanten), representing 82 separate works. Head office in Berlin.
- In the machine industry, the most important syndicates are the following :—
- (12) The Union of Electrical Works.
- (13) The Union of Producers of Sawing Machines, established in 1899, and comprising 26 firms.
- (14) North German Association of Carriage Builders, established in 1877.
- The strength of the unions in the machine industry lies in the very high specialisation of production.
- 138** There is a tendency towards uniting the iron syndicates into larger concerns, the Pig Iron Syndicate at Düsseldorf combining with the Half-finished Goods Union, while the Rhenish-Westphalian Coal Syndicate and the Westphalian Syndicate on June 20th, 1902, established at Düsseldorf a central office under the style of "Clearing House for Export." There are two forms of syndicates : (1) as a company of shareholders, "Aktiengesellschaft" ; (2) as an association based upon contract agreed upon by the firms participating in it of an "Aktiengesellschaft."
- 139** The head office is known as a "gemeinschaftliche Verkaufsstelle." This form of syndicate is, strictly speaking, an independent company, the shares of which are held by the respective firms. In the rules there are generally clauses providing that shares must remain the property of the members of the syndicate, and for every transfer of shares within the company the consent of the shareholders must be obtained at a general meeting of the members of the company. Every firm receives a number of shares in proportion to its share in the total value of the association, but by no means to its actual value. The object of these shares is not to raise capital, but simply to demonstrate the position of the various contracting parties, e.g., the Rhenish-Westphalian Coke Syndicate has a nominal capital of 400,000 marks, although the actual value of the Syndicate is very much greater. Sometimes capital raised is used for the establishment of the central office ; sometimes the actual amount of capital is quite nominal and then it exists only in order to comply with the law. Such organisation is possible where the producing

	works already exist, as it is not necessary to create new works, but only a legal body which can take the management of the company.	139 cont.
Period of Agreement.	In the second case—that of a syndicate based on contract—the constituent firms conclude a written agreement, for periods of two, three, four or five years. When the contract has expired, it is generally renewed for another period of years. A central office is also established and its functions for all practical purposes are the same as those of a central office in the first case, the central office in this second case is sometimes called “die Geschäftsstelle.” Sometimes, when a powerful firm is a member of a syndicate, it assumes the functions of the central office, e.g., in the case of the rolling mills of Upper Silesia, the selling of the products was in 1887 entrusted to the “United Königs and Laurahütte.”	140
Nature of Agreement.	The German law contains no special provisions in respect of monopolies of kartells, and the Courts have several times acknowledged their legality. Each syndicate is started by the appointment of a number of experts, whose mission it is to visit each of the associated works and to determine its capacity for production, and the extent of its participation in the total production of the syndicate. Subsequently, Germany is divided into a number of districts, and the production of each duly allotted to each of the contracting parties. Orders do not go directly to the factories, but are received by the central office. There they are distributed among the associated firms, according to their capacity for production, the quality of the product, and the conditions of transport. In this allotment, the geographical situation of the various works is taken into account as playing an important part in determining the mode of transport and the freight charges. In cases where, by virtue of its geographical position, one of the associated firms receives orders in excess of its proper quota, the excess is deducted in the allotment of the next quarter.	141
Payments.	Payments do not go directly to the respective firms, but pass through the central office. At the end of the year, when the accounts are made up, differences due to the exceeding or falling short of the assigned proportions are adjusted, so that each firm is credited only with the part assigned to it in the table of the allotments.	142
Sale of Goods.	The contracting parties are sometimes under obligation to sell their products to the syndicate. Sometimes the right of selling the goods is enjoyed by the central office and also by any of the associated firms. Sometimes, as in the case of the Wire Nail Syndicate, all the firms give the central office the exclusive right of dealing in a particular sort of goods, but can deal—subject to other rules of the syndicate—in all their other sorts of products.	143
Prices.	Prices are fixed by mutual agreement among the firms or by the central office. At the beginning of each year a price-list is issued, containing detailed statements as to prices which are to be paid by the central office to the firms, as well as to the prices which are to be paid by customers when they deal with separate firms.	144
Retention of Customers.	The above general rules are subject, of course, to exceptions. Sometimes the firms, entering into the contract, make the proviso that they retain all their customers, and this way interfere with the principle of a purely geographical distribution of orders, e.g., the rules of the Syndicate of Wire Nail Manufacturers provide that the firms shall retain the customers they dealt with before joining the syndicate, and that their production cannot be diminished. Further, frontier districts are treated exceptionally with a view to hinder foreign imports. And—the most significant point—in sales abroad the prices are generally lower than those fixed by the syndicate for the home market, and to make up the losses, bounties are paid to the exporting factories out of the general funds of the syndicate.	145
	The general conditions under which the production is determined and products are sold are settled at the general meeting. Modifications proposed in any particular case must also receive the sanction of the general meeting. But the directors of the combination have apparently much discretion left with them by the different members, as they seem able to control the business and to determine prices almost absolutely. Power ultimately becomes concentrated in the hands of the directors; the general meeting, whilst retaining its legal, seems gradually to lose any practical, power.	
Deposit by Members.	Each associated member undertakes to submit unconditionally to the decisions and measures taken by the syndicate. When joining the association each member has to deposit with the syndicate blank acceptances as a guarantee for the due execution of his obligations, which, in case of any contravention of the statutes, are placed in circulation to the amount of the fine incurred. The working expenses of the syndicates are covered by a levy, which is a certain percentage on the invoice prices, and this is fixed at the general meeting. If the funds thus obtained exceed the expenses, the surplus is divided among the members.	146
	When first started, the syndicates acted with great moderation. Chief attention was given to the improvement of internal organisation, and, as a consequence, prices rose slightly. In order to maintain steady prices, syndicates, when making contracts, demanded the highest prices obtainable and insist on contracts which are to last for a length of time, thus entirely putting a stop to contracts for a short duration, which formerly were the rule in the iron trade. Such contracts are known as “contracts of fusion,” e.g., the Pig Iron Syndicate forced its customers to accept contracts for the supply of raw iron during 1900 and 1901 at unprecedented prices; the price of raw iron in January, 1900, just before the new contracts were to be concluded, being increased by 10 per cent.	
Contracts by Syndicate or Members.	In some Syndicates the “Verkaufsstelle” makes a contract of sale in the name of the whole syndicate, but in others as the representative of a particular firm. Contracts entered into between syndicates and their customers often contain clauses providing for the permanence of a certain minimum price for the goods manufactured by those customers out of the raw material supplied by the syndicate. Sometimes contracts require the boycotting of particular firms, or of particular firms on certain occasions: e.g., the Wire Syndicate makes it conditional to its customers at home not to sell below a particular minimum price, and not to furnish wire or wire goods either directly or indirectly to such firms as refuse to enter the union of German wire manufacturers. Thus, all firms who draw even part of their supplies from firms who are not members of the syndicate, or from foreigners, find themselves boycotted by the syndicate. Matters go even further, and syndicates co-operate with each other in the practice of boycotting: e.g., the Wire Rod Syndicate refuses to supply any manufacturer of wire nails who is not a member of the Wire Nails Syndicate.	147
Prices in different Districts.	The districts in which a syndicate meets competition from “outsiders” bear a special name of “bestrittenen” districts. Those where this competition has not to be faced are called “unbestrittenen” districts. The prices fixed by a syndicate for all kinds of goods produced are by no means the same in different districts, or even in the same district for different customers. Distant customers are charged a lower price, lower approximately by the	148

cost of freight from the place of production to the factory of the purchaser; nearer customers are charged a higher price on the ground simply that their proximity to the centre of production will enable them to afford to pay more money. On the other hand, in a district in which there is no active competition, a higher price is charged than in one where either there is competition already in existence, or other sources of supply either actually compete, or where it is likely to come into existence and interfere with the production of the syndicate. The same thing is sold at different prices according to circumstances, the syndicate, in every case, charging all that the trade will bear. In the last few years, the German home market being practically ruled by the iron syndicates, the latter regulate their prices according to those of the United Kingdom by adding to the British price, customs, freight, &c.

During the industrial crises of 1900-1902, syndicates developed in a high degree two other methods, namely: (1) that of granting private export bounties; (2) that of having large sales abroad at low prices, and these prices sometimes considerably below the cost of production.

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It is necessary to remember that the coal and coke syndicates exercise a very large influence upon the whole German iron trade: in many cases, it was their policy of raising prices of coal and coke which induced the iron manufacturers to try to recoup themselves for the increased expenses of production by adopting a similar policy towards their customers. And the policy of bounties and cheap exports, pursued by the iron syndicates, originated either in imitation of, or in co-operation with, the coal and coke syndicates.

Coal and Coke Syndicates.

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The system of bounties was introduced in 1897. Bounties are paid for such products of the syndicates, the exportation of which could be proved. The bounties were granted by the coal, pig iron, and half-finished goods syndicates, with a partial co-operation on the part of the coke syndicate. The rate, which was fixed at 15 marks per ton net of the exported goods, was granted only upon a portion (66⅓, 50, 33⅓ per cent) of the raw material obtained from the syndicates. The Pig Iron Syndicate allows its customers an export premium of 10 marks per ton, the union of iron merchants of 20 marks per ton. The manufacturers of iron and steel wire receive 15 marks per ton on one half of the raw materials purchased by them, each of the syndicates concerned (the coke, pig iron, and half-finished goods) paying one-third of the bounty, and in its turn, since November, 1900, the syndicate of rolled wire promised its clients an export bounty of 15 marks a ton.

Export Bounties.

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Originally the bounties were only to be paid to unions which offered a guarantee that by these premiums the price on the international market would not be lowered below the limit established by foreign competition. But this condition has not been observed, and since about 1900, private bounties have been granted, although the members of syndicates themselves recognise that Germany has lowered the prices in the world's market. The "Clearing House for Export" (established in the middle of the year 1902 by syndicates representing the iron and coal industry) represents another example of the co-operation among the syndicates in maintaining the policy of granting bounties. The "Clearing House" settles the amounts of the export premiums for the members of the syndicates concerned, controls exports, and makes payments of bonus. The amount of bonifications is fixed quarterly. For the second quarter of 1902 it was granted retrospectively to April 1st at the following rates:—1 mark 50 pfennig per ton of such coal and coke as is used for the manufacture of export goods; furthermore, 2 marks 50 pfennig for the ton of new iron, exclusive of the bonus upon coal; furthermore, 10 marks per ton of half-finished goods, and 10 marks per ton of girders, both inclusive of the bonus granted on coal and raw iron.

"Clearing House for Export."

The policy of granting bounties on export is only a part of a general system of fostering the export trade by syndicates in order to reduce the stock on the home market. The sales abroad are effected at a price below that charged on the home market, and sometimes at a price much below the cost of production. The union of German wire manufacturers sold in the second half of 1900 at home 22,000 tons, with a profit of £58,850; to foreign parts, 19,000 tons, with a loss of £42,950. In February, 1901, the wire rolling mills received 150 marks per ton at home, but sold at 105 marks abroad. In May, 1903, the prices were:—

In Marks, per Ton.				
		Home Price.		Export Price.
Iron Sheets	..	140—145	..	100—120
Rolled Wire	..	150	..	135
Girders	..	112	..	75

The coal and coke syndicates charge lower prices for the material used for the manufacture of pig iron and iron and steel goods which are to be exported, while the prices of coal and coke used for the manufacture of goods destined for inland consumption remain higher. Similarly the iron syndicates supply their products for inland customers at a cheaper rate when these products are used as raw material for goods to be exported, e.g., the price of wire for nails at the end of 1900 was for sale to German consumers 185 marks per ton, while for sale in Germany, but to be exported from Germany, 170 marks per ton.

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Large sales abroad very much below the cost of production were made at the time of the industrial crisis in 1901. A Silesian firm exported two-thirds of its total output of pig iron; a Saarbruck firm exported 80 per cent. of its production; in both cases the prices obtained abroad were much below the cost of production, and the bounties paid by the controlling kartells only slightly reduced the loss. During the industrial crisis some orders were undertaken purely in order to keep the works going. This method was pursued also when the crisis had passed, and is pursued by flourishing industries, prices being so calculated that the sales in the home market cover losses sustained by sales abroad and leave sufficient margin for profit. The union of wire-drawers has made a profit of £60,000 in its home trade, but lost £42,950 on its foreign trade. The wire nail syndicate is said to have gained in six months (of 1902) a profit of 1,200,000 marks on the home market and suffered a loss during the same period of 850,000 marks on foreign sales. In the year 1901 the merchant iron union created an export league for merchant iron, which fixes the prices for export upon a scale varying considerably from that for home consumption. In the crises of 1901-1902 high prices of coal, coke and pig iron were maintained, while the prices of all other goods fell considerably. The members of the above syndicates weathered the crises successfully while many outside firms, especially firms manufacturing iron into finished goods were closed or suffered serious losses. Iron syndicates acted as an efficient brake during the general decline, saving organised industries from possible ruin. On the other hand the syndicates contributed, by the maintenance of high prices, to the losses sustained by the manufacturers of finished iron goods.

Export Sales and Industrial Crisis.

(AS ARRANGED BY A

Name of Country.	Pig Iron.	Rails.	Fishplates.	Billets, Blooms, Ingots.	Plates, Iron and Steel.	Tin Bars.
Russia .	4s. 11d. cwt.	4s. 11d. cwt.	4s. 11d. cwt.	4s. 11d. cwt.	6s. 5d. cwt.	4s. 11d. cwt.
Germany .	6d. cwt.	1s. 3¼d. cwt.	1s. 3¼d. cwt.	9¼d. cwt.	1s. 6¼d. cwt. in the rough 2s. 6½d. cwt. further worked	1s. 3¼d. cwt.
Belgium .	1d. cwt.	4¾d. cwt.	4¾d. cwt.	Blooms, 2d. cwt. Billets, 3d. cwt.	3d. cwt.	4¾d. cwt.
France .	7¼d. cwt.	2s. 5¼d. cwt.	...	Ingots, 2s. 0½d. cwt. Blooms and Billets, } 2s. 5¼d. cwt.	2s. 10¼d. cwt. Cut to any shape, 3s. 0½d. cwt.	2s. 5¼d. cwt.
Spain .	9¾d. cwt.	2s. 5¼d. cwt. 1s. 10d. cwt. if imported by a Railway Company	4s. 0¾d. cwt. 3s. 3d. cwt. if imported by a Railway Company	2s. 0½d. cwt.	6s. 6d. cwt.	3s. 10¼d. cwt.
Italy .	4¾d. cwt.	2s. 5¼d. cwt.	2s. 5¼d. cwt.	1s. 1½d. cwt.	2s. 10¼d. cwt.	2s. 5¼d. cwt.
Austria .	8d. cwt.	2s. 6½d. cwt.	3s. 0½d. cwt.	Blooms, 1s. 6¼d. cwt. Billets, 2s. 0¼d. cwt.	4s. 0¾d. cwt.	2s. 6½d. cwt.
United States	10d. cwt.	1s. 7½d. cwt.	1s. 10½d. cwt.	Iron, 2s. 4d. cwt., but when charcoal is used in manufacture, 2s. 6d. cwt. Steel, 1s. 4¾d. cwt. to £1 1s. 11d. cwt., according to value per lb.	2s. 4d. cwt. to 4s. 8d. cwt. valued at less than 4 cents per lb. ; over that valuation, 25 per cent. <i>ad valorem</i>	2s. 4d. cwt.

DUTIES.—IRON AND STEEL.

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BRITISH MANUFACTURER.)

Hoop Iron.	Screws.	Wire.	Wire Nails.	Bolts and Nuts.	Tubes.	Name of Country.
6s. 5d. cwt.	£1 19s. 5d. cwt.	9s. 10d. cwt. to 19s. 8d. cwt., according to size	£1 3s. 11d. cwt.	13s. 9½d. cwt. to £1 1s. 8d., according to weight.	13s. 9½d. cwt.	Russia.
...	5s. 1d. cwt.	1s. 6¼d. cwt.	3s. 0½d. cwt.	3s. 0½d. cwt.	1s. 6¼d. to 3s. 0½d. cwt.	Germany.
4¾d. cwt.	1s. 7½d. cwt.	4¾d. cwt.	1s. 7½d. cwt.	1s. 7½d. cwt.	...	Belgium.
2s. 7¾d. to 2s. 10¼d. cwt., according to thickness	5s. 8¼d. cwt.	2s. 10¼d. cwt. to 12s. 2d. cwt., according to thickness	3s. 3d. cwt. to 9s. 9d. cwt., according to size	5s. 8¼d. cwt.	3s. 8d. to £81 5s. 8d. cwt.	France.
5s. 3½d. cwt.	8s. 6d. cwt.	4s. 10½d. cwt. to 6s. 6d. cwt., according to thickness	7s. 7d. cwt.	8s. 6d. cwt. 5s. 8½d. cwt. if imported by a Railway Company	9s. 9d. cwt.	Spain.
...	...	4s. 5¾d. cwt. to 6s. 1d. cwt., according to thickness	4s. 0¾d. cwt.	...	4s. 10½d. to 6s. 11d. cwt.	Italy.
...	10s. 2d. cwt. to 15s. 3d. cwt., according to thickness	1s. 6¼d. cwt. to 5s. 1d. cwt., according to thickness	6s. 7d. cwt.	...	6s. 1d. cwt.	Austria.
2s. 4d. cwt. to 3s. 8¾d. cwt. according to thickness	18s. 8d. cwt. to £2 16s. cwt. according to length	5s. 10d. cwt. to 9s. 4d. cwt., valued at less than 4 cents per lb.; over that valuation, 40 per cent. to 45 per cent. <i>ad valorem</i>	2s. 4d. cwt. to 4s. 8d. cwt. according to length	7s. cwt.	9s. 4d. to 11s. 8d. cwt.	United States.

Name of Country.	Pig Iron.	Rails.	Fishplates.	Billets, Blooms and Ingots.	Plates.
India . . .	1 per cent. <i>ad valorem</i> .	Free when imported by a Railway Company, otherwise 1 per cent. <i>ad valorem</i>	Free when imported by a Railway Company, otherwise 1 per cent. <i>ad valorem</i>	1 per cent. <i>ad valorem</i>	1 per cent. on a valuation of £7 13s. 4d. per ton
Australia . . .	Free (b)	12½ per cent. <i>ad valorem</i>	12½ per cent. <i>ad valorem</i>	Free (b)	Free (b)
New Zealand . . .	Free	Free	20 per cent. <i>ad valorem</i>	...	Free
South Africa . . .	Free	2½ per cent. <i>ad valorem</i>	2½ per cent. <i>ad valorem</i>	Free	Free
Canada . . .	10s. 3d. 33 per ton of 2,000 lbs.	Not less than 45 lbs. per lineal yard for use by a public Railway and operated by steam motive power only free Other Rails 30 per cent. <i>ad valorem</i>	£1 12s. 10d., 67 per ton of 2,000 lbs.	8s. 2d., 67 per ton of 2,000 lbs.	Ship Plates free Not less than 30 ins. in width and ¼ in. in thickness, 10 per cent. <i>ad valorem</i>

AUSTRALIA.—

- (a) A duty of 10 per cent. *ad valorem* will be charged on a date to be fixed by proclamation, which will be issued as soon as it is certified that manufacture sufficiently established.
- (') A duty of 10 per cent. *ad valorem* will be charged on a date fixed by proclamation. Such proclamation will issue so soon as it is certified by the Minister of Customs that the manufacture to which the proclamation refers has been sufficiently established in the Commonwealth.

IMPORT DUTIES.

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BRITISH MANUFACTURER.)

Tin Bars.	Hoop Iron.	Screws	Wire.	Wire Nails.	Bolts and Nuts.	Tubes.	Name of Country.
1 per cent. on a valuation of £6 13s. 4d. per ton	1 per cent. on a valuation of £7 13s. 4d. per ton	5 per cent. <i>ad valorem</i>	...	1 per cent. <i>ad valorem</i>	1 per cent. <i>ad valorem</i>	1 per cent. <i>ad valorem</i>	India.
Free (b)	Free (b)	Free	...	3s. per cwt.	(Carriage) $\frac{3}{8}$ in. and under in diameter and 4 in. and under in length free Other bolts and nuts $12\frac{1}{2}$ per cent. <i>ad valorem</i>	Free (a)	Australia.
Free	Free	20 per cent. <i>ad valorem</i>	...	2s. per cwt.	Free	Partly free and others 20 per cent. <i>ad valorem</i>	New Zealand.
Free	Free	10 per cent. <i>ad valorem</i>	...	10 per cent. <i>ad valorem</i>	$2\frac{1}{2}$ per cent. <i>ad valorem</i>	$2\frac{1}{2}$ per cent. <i>ad valorem</i>	South Africa.
£1 8s. 9d., 33 per ton of 2,000 lbs.	£1 8s. 9d., 33 per ton of 2,000 lbs.	35 per cent. <i>ad valorem</i>	...	0·30d. per lb.	0·37d. per lb. and 25 per cent. <i>ad valorem</i> in addition.	5 per cent. <i>ad valorem</i>	Canada.

SOUTH AFRICA.—

When the produce of the United Kingdom, a rebate of the whole duty is allowed on goods subject to the *ad valorem* rate of $2\frac{1}{2}$ per cent., and of one-fourth the duty on goods subject to other *ad valorem* rates.

CANADA.—

When entitled to the benefits of the British Preferential Tariff the duty is subject to a reduction of one-third.

SECTION XIV.—STATISTICAL TABLES.

(A.) EXPORTS OF IRON AND STEEL, MANUFACTURED AND PARTLY MANUFACTURED, SHOWING
PRINCIPAL COUNTRIES OF DECLARED DESTINATION.

(Compiled from "Annual Statements of the Trade of the United Kingdom.")

Table 16.
Old Scrap Iron
and Steel.

TABLE 16.—EXPORTS: OLD SCRAP IRON AND STEEL (in thousand tons).

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Italy	45	38	42	51	22	16	38	28	7	15	20
China	23	22	24	37	24	35	27	14	31	25	35
Total to Foreign Countries	76	70	76	110	70	66	92	80	54	66	100
Total to British Possessions	42	13	21	18	17	18	24	14	31	37	41
Total to All Countries ..	118	83	97	128	87	84	116	94	85	103	141

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Table 17.
Pig Iron.

TABLE 17.—EXPORTS: PIG IRON (in thousand tons).

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Russia	129	108	99	53	64	102	81	20	12	8	8
Sweden	20	28	31	34	51	47	50	51	40	45	49
Norway	12	16	14	17	21	20	21	16	17	16	17
Denmark (includes Iceland and Greenland)	18	18	17	20	25	22	21	22	22	22	29
Germany	205	224	219	324	348	292	438	460	204	111	147
Holland	111	109	109	182	219	169	266	333	127	64	73
Belgium	42	40	38	88	132	76	114	131	56	40	41
France	45	36	31	43	69	68	126	128	72	50	52
Italy	86	82	101	103	101	115	117	109	108	92	99
Japan	17	26	30	32	30	26	16	9	29	18	32
United States of America ..	32	12	41	30	13	20	35	45	44	504	333
Total to Foreign Countries	789	782	806	983	1,114	998	1,324	1,369	773	1,006	921
East Indies	9	12	17	34	39	16	13	12	21	20	32
Australasia	18	20	29	26	40	20	28	34	32	30	49
Canada	18	7	7	4	3	3	11	10	9	44	59
Total to British Possessions	46	43	55	70	86	44	56	58	67	97	145
Total to All Countries ..	835	828	861	1,053	1,200	1,942	1,380	1,427	839	1,103	1,066

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Table 18.
Iron Bars.

TABLE 18.—EXPORTS: IRON BAR (in thousand tons).

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries	70	62	62	72	70	65	62	66	37	37	36
Total to British Possessions	65	52	63	83	79	70	75	73	67	78	75
Total to all Countries ..	135	115	126	155	149	135	136	138	104	115	112

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TABLE 19.—EXPORTS: IRON ANGLE, BOLT AND ROD (in thousand tons).

Table 19.
Angle, Bolt and
Rod.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries	9	11	14	17	12	10	17	15	9	7	5
Total to British Possessions	4	4	4	6	7	4	6	4	3	4	12
Total to All Countries ..	13	15	18	23	19	14	24	19	13	11	17

TABLE 20.—EXPORTS: RAILS, IRON AND STEEL (in thousand tons).

Table 20.
Rails.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Russia	19	3	13	11	7	17	13	—	13	10	8
Sweden	36	16	11	32	23	36	64	34	45	25	29
Egypt	13	7	11	16	41	32	29	15	10	23	18
East Africa	5	7	1	2	21	16	24	12	3	15	34
China	10	—	—	12	12	13	14	5	—	10	3
Japan	30	29	25	44	47	4	3	10	5	28	16
Mexico	5	7	6	14	21	6	14	12	5	54	14
Brazil	13	6	21	20	18	18	13	9	10	14	7
Argentine	10	6	21	71	46	45	21	37	64	51	46
Total to Foreign Countries	195	140	192	280	287	256	247	182	200	284	221
South Africa	14	20	6	37	37	29	16	27	25	33	123
East Indies	94	79	100	148	154	143	110	79	94	119	122
Australia	42	32	29	55	72	28	51	64	79	67	45
Canada and Newfoundland ..	112	57	38	40	10	6	32	13	56	69	84
Total to British Possessions	267	191	182	301	293	220	224	191	266	299	383
Total to All Countries ..	462	331	374	581	580	476	471	374	466	584	604

TABLE 21.—EXPORTS: RAILROAD IRON, CHAIRS AND SLEEPERS (in thousand tons).

Table 21.
Chairs and
Sleepers.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries	12	9	11	15	20	15	18	14	10	23	13
East Indies	43	43	29	61	69	46	31	13	20	22	13
Total to British Possessions	45	44	33	77	92	58	42	29	32	39	32
Total to All Countries ..	57	53	44	92	112	73	60	43	42	62	45

TABLE 22.—EXPORTS: RAILROAD IRON, UNENUMERATED (in thousand tons).

Table 22.
Other Railroad
Iron.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries	15	17	18	33	32	30	28	25	34	33	27
East Indies	11	15	13	28	40	20	17	12	13	21	16
Australia	4	2	4	7	8	2	6	5	7	8	7
Total to British Possessions	24	23	21	41	58	30	30	22	30	38	47
Total to All Countries ..	39	40	39	74	90	60	58	47	64	71	74

Table 23.
Wire.

TABLE 23.—EXPORTS: WIRE OF IRON AND STEEL (EXCEPT TELEGRAPH WIRE) AND MANUFACTURES THEREOF (in thousand tons).

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Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	*1903.
Total to Foreign Countries ..	14	16	19	21	20	18	23	21	21	23	27
South Africa, G. H. and Natal ..	8	5	7	10	9	5	5	3	5	8	10
Australia and New Zealand ..	10	10	11	20	17	15	12	8	13	16	14
Total to British Possessions	23	19	23	35	31	26	25	18	26	32	33
Total to All Countries ..	37	35	42	56	51	43	48	38	47	55	60

* 1903 includes telegraph wire.

Table 24.
Sheets.TABLE 24.—EXPORTS: IRON OR STEEL SHEETS NOT UNDER $\frac{1}{8}$ -IN. THICK (in thousand tons).

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Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Russia	7	14	3	12	18	11	5	3	3	2	—
Norway	4	7	6	7	9	12	14	13	7	12	10
Denmark	4	7	4	8	8	11	8	8	5	6	3
Germany	26	32	34	46	39	31	37	18	10	2	4
Holland	9	7	9	21	27	11	9	15	1	1	1
Japan	4	7	7	14	10	11	16	26	11	16	23
United States of America ..	5	13	2	1	1	1	3	2	3	4	2
Total to Foreign Countries	73	105	84	125	128	108	121	116	60	64	62
East Indies	4	4	8	10	8	9	10	11	13	17	19
Australasia	4	4	8	12	11	17	14	17	14	16	9
Canada	8	6	4	5	2	1	7	4	6	24	20
Total to British Possessions	19	17	25	31	27	32	38	38	37	62	57
Total to All Countries ..	92	122	109	156	155	140	159	154	97	126	119

Table 25.
Ingots or Blooms.

TABLE 25.—EXPORTS: STEEL CAST IN INGOTS OR BLOOMS, &c. (in thousand tons).

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Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Russia	1	11	8	18	19	13	12	—	—	—	—
United States of America ..	2	2	3	2	4	2	4	4	2	17	10
Others	1	1	—	5	1	4	2	2	—	1	1
Total	5	14	11	25	24	19	18	6	2	18	11
Total to British Possessions	2	1	2	1	1	1	5	6	3	6	2
Total to all Countries ..	7	15	13	26	25	20	23	12	5	24	13

Table 26.
Combined Iron
and Steel
Manufactures.

TABLE 26.—EXPORTS: MANUFACTURES OF STEEL, OR OF STEEL AND IRON COMBINED (in thousand tons).

165

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries ..	7	11	10	19	27	16	17	18	~~22~~	15	27
South Africa	2	2	3	2	5	2	2	3	5	17	17
East Indies	6	4	7	10	9	12	20	15	13	10	13
Others	3	2	3	5	5	4	5	6	5	5	6
Total to British Possessions	11	8	13	17	19	19	27	24	23	33	36
Total to All Countries ..	18	19	23	36	46	35	44	42	52	48	63

TABLE 27.—EXPORTS: GALVANIZED AND CORRUGATED SHEETS (in thousand tons).

Table 27.
Galvanised and
Corrugated Sheets.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Chili	9	8	11	8	8	5	5	10	10	7	7
Argentine	15	18	20	24	21	22	24	22	27	25	32
Total to Foreign Countries	67	69	82	99	93	87	102	99	96	113	141
South Africa	20	21	33	29	30	32	22	23	30	58	58
East Indies	28	28	38	44	41	40	41	48	51	64	67
Australasia	40	41	40	61	53	54	60	67	57	55	64
Total to British Possessions	99	100	123	146	134	139	136	147	154	218	211
Total to All Countries ..	166	169	205	245	227	226	238	247	250	331	352

TABLE 28.—EXPORTS: IRON OR STEEL BLACK PLATES FOR TINNING (in thousand tons).

Table 28.
Black Plates.

Country.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries	30	45	55	53	79	61	45	50	60
British Possessions	1	—	1	—	—	—	—	—	5
Total to All Countries	31	45	56	53	79	61	45	50	65

TABLE 29.—EXPORTS: TINPLATES AND SHEETS (in thousand tons).

Table 29.
Tinplates.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Russia	30	24	30	20	31	28	28	33	31	31	25
Germany	3	4	4	14	11	12	26	18	11	19	17
Holland	5	5	5	7	9	10	14	15	12	19	17
Belgium	2	2	2	3	4	3	6	7	6	9	13
France	11	10	13	12	14	11	14	23	16	18	15
United States of America ..	255	227	223	113	85	65	63	58	76	65	51
	346	312	318	215	206	191	204	203	203	232	216
East Indies	6	8	11	15	23	15	14	22	25	25	32
Australia	7	11	16	15	12	17	12	20	17	22	12
Canada and Newfoundland ..	16	17	16	17	22	17	21	22	17	22	24
Total to British Possessions	33	41	48	52	65	60	52	70	68	80	77
Total to All Countries ..	379	353	366	267	271	251	256	273	271	312	293

TABLE 30.—EXPORTS: SHEETS AND BOILER PLATES (in thousand tons).

Table 30.
Boiler Plates.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries	67	50	23	33	36	25	29	17	17	20	17
South Africa	1	1	1	—	1	—	1	—	1	1	—
East Indies	7	6	8	9	11	7	6	5	3	3	5
Australasia	5	4	6	8	9	7	5	6	5	3	4
Canada	7	11	8	7	10	8	12	6	8	14	15
Other British Possessions ..	2	2	2	2	2	2	3	4	1	1	1
Total to British Possessions	23	24	25	26	33	24	27	21	18	22	25
Total to All Countries ..	90	74	48	59	69	49	56	38	35	42	42

Table 30a.
Hoop Iron.

TABLE 30A.—EXPORTS: HOOPS AND HOOP IRON (in thousand tons).

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Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries ..	25	28	28	37	27	28	29	24	16	16	12
Total to British Possessions ..	21	24	25	25	22	23	24	22	23	25	33
Total to All Countries	46	52	53	62	49	51	53	46	39	40	45

Table 31.
Tubes and Pipes.

TABLE 31.—EXPORTS: IRON TUBES AND PIPES (WROUGHT) (in thousand tons).

171

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries ..	21	21	25	35	34	31	33	29	23	26	56
East Indies	3	3	4	6	5	5	6	7	7	6	—
Canada	3	1	—	1	—	—	2	1	1	3	—
Total to British Possessions	18	17	22	32	28	26	30	29	32	34	120
Total to All Countries ..	39	38	47	67	62	56	63	58	55	60	176

Before 1903, Tubes, Fittings and Pipes were included in Iron, Cast and Manufactures thereof, unenumerated.

Table 32.
Anchors, &c.

TABLE 32.—EXPORTS: IRON ANCHORS, GRAPNELS, CHAINS AND CABLES (in thousand tons).

172

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries ..	13	13	14	15	15	16	17	16	17	17	16
Total to British Possessions ..	5	5	5	7	6	5	5	7	7	9	9
Total to All Countries	18	18	19	22	21	21	22	23	24	26	25

Table 33.
Nails, &c.

TABLE 33.—EXPORTS: NAILS, SCREWS AND RIVETS (in thousand tons).

173

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total to Foreign Countries ..	6	6	6	7	8	8	9	9	7	7	7
Total to British Possessions ..	9	9	10	13	13	11	12	12	12	12	13
Total to All Countries	15	15	16	20	21	19	21	21	19	19	20

174 TABLE 34.—EXPORTS: STEEL BARS, ANGLES, RODS, &c. (in thousand tons). **Table 34.**
Steel Bars, &c.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Russia	4	7	8	8	12	11	11	7	5	5	5
Norway	1	3	3	4	5	6	6	6	5	6	7
Denmark	2	3	2	5	4	5	4	3	3	3	2
Germany	12	13	17	19	20	22	19	12	8	4	5
Holland	4	4	4	5	8	5	7	7	2	2	2
France	1	2	3	5	2	2	4	7	3	2	2
Italy	3	6	2	6	4	4	7	6	3	8	4
Japan	3	3	3	7	8	6	11	16	7	11	15
United States of America ..	11	8	12	10	8	8	11	10	9	31	13
Total to Foreign Countries	52	59	65	82	86	88	99	93	59	80	71
East Indies	6	6	6	9	16	18	19	22	24	25	35
Australasia	3	3	4	6	8	11	18	21	20	14	12
Canada	7	4	4	5	2	1	6	4	5	26	26
Total to British Possessions	18	16	22	32	33	36	48	50	53	72	86
Total to All Countries ..	70	75	87	114	119	124	147	143	112	153	157

175 TABLE 35.—EXPORTS: IRON, WROUGHT AND MANUFACTURED THEREOF **Table 35.**
(in thousand tons). Wrought Iron, &c.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.*
Total to Foreign Countries	36	36	35	41	43	46	32	33	31	33	37
South Africa	9	8	10	16	17	15	14	16	13	18	18
East Indies	17	18	20	32	38	37	41	29	22	18	20
Australia	11	9	12	16	15	15	12	13	13	12	7
West India Islands	2	2	2	3	2	2	1	1	1	1	—
Others	5	4	4	6	6	6	7	8	7	10	9
Total to British Possessions	45	41	48	73	78	75	75	67	56	59	64
Total to All Countries ..	81	77	83	114	121	116	108	100	87	92	101

* 1903 includes Bolts and Nuts.

176 TABLE 36.—EXPORTS: IRON, CAST AND MANUFACTURED (in thousand tons). **Table 36.**
Cast Iron, &c.

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.*
Japan	2	10	7	13	12	11	4	5	7	1	—
Brazil	10	11	9	14	12	21	5	2	2	6	—
Argentine	4	4	3	8	9	10	17	7	11	9	—
Total to Foreign Countries	55	64	60	79	77	82	81	67	64	53	16
South Africa	8	9	10	13	17	16	13	13	14	19	—
East Indies	36	22	30	23	27	20	16	20	18	24	—
Australia	13	7	9	16	15	13	17	14	18	19	—
Total to British Possessions	71	53	62	65	72	59	53	55	62	73	45
Total to All Countries ..	126	117	122	144	149	141	134	122	126	126	61

* Change of classification in 1903.

Description.	1893.		1894.		1895.		1896.	
	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.
1 Old Scrap Iron and Steel	216	119	185	36	199	53	294	45
2 Pig Iron	1,845	111	1,790	103	1,928	129	2,344	161
3 Iron Bars	441	408	398	339	380	376	438	520
4 Iron Angle, Bolt and Rod	56	26	64	22	76	22	99	37
5 Iron or Steel Rails	815	1,106	567	742	752	681	1,246	1,348
6 Chairs and Sleepers	57	211	48	196	52	119	64	321
7 Unenumerated—Railroad	131	191	142	189	137	156	262	319
8 Wire, and Manufactures thereof, except Telegraphic *	327	321	339	281	373	338	389	515
9 Ship, Bridge, Boiler, and other Plates and Sheets.. .. .	—	—	—	—	—	—	—	—
10 Galvanised and Corrugated Sheets	791	1,255	759	1,190	875	1,376	1,108	1,736
11 Black Plates for Tinning	—	—	—	—	Steel 301	5	445	7
12	—	—	—	—	Iron 31	2	19	7
13 † Sheets and Boiler Plates	580	170	411	175	173	177	252	182
14 Hoops	169	156	186	162	172	166	241	168
15 Anchors, Grappels, Chains and Cables	197	82	199	75	198	78	242	103
16 ‡ Tubes and Pipes—Wrought Iron	322	278	310	257	372	314	522	468
17 Nails, Screws, and Rivets	126	196	108	173	114	193	134	226
18 Bedsteads	—	—	—	—	—	—	—	—
19 Iron, Cast and Manufactures—Unenumerated	457	542	465	403	439	468	543	521
20 § Wrought and Manufactures—Unenumerated	779	786	731	709	732	820	810	1,150
21 Steel Ingots, Blooms, Billets or Slabs, or similar—partly manufactured	20	10	58	4	51	8	101	8
22 Bars, Angles, Rods, &c.	815	188	833	182	958	231	1,112	314
23 Ship, Bridge and other Plates	144	—	99	—	75	—	3	—
24 Tinned Plates and Sheets—Iron or Steel	4,539	453	3,842	497	3,690	549	2,468	568
25 Sheets	539	130	779	118	545	155	776	206
26 § Tyres, Axles and Wheels	—	—	—	—	—	—	—	—
27 Manufactures of Steel or Iron and Steel combined—Unenumerated	236	239	310	188	369	252	569	362
28 Iron, Puddled and Puddled Bars	1	14	11	8	7	14	11	18
Total	13,603	6,992	12,634	6,049	12,999	6,682	14,492	9,310

* In 1903 Telegraph Wire is included.
† Separated in 1904 into Sheets, &c., "under ½ in. thick" and "not under ½ in. thick."
‡ Separated in 1904 into "Tubes and Fittings," and "Pipes."
§ Includes Bolts and Nuts, which are also separately returned in 1903.
§ Included in Carriages and Machinery prior to 1903.

(B.) IMPORTS OF IRON AND STEEL, MANUFACTURED AND PARTLY MANUFACTURED,
WITH PRINCIPAL COUNTRIES OF DECLARED ORIGIN.
(Compiled from "Annual Statements of the Trade of the United Kingdom.")

Table 38.
Pig Iron.

TABLE 38.—IMPORTS: PIG AND PUDDLED IRON (in thousand tons).

178

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Sweden	32	53	77	64	59	61	67	67	72	61	53
Spain	—	4	10	21	6	16	12	5	11	8	28
United States of America	1	1	4	17	91	76	81	94	35	11	4
Canada	—	—	—	—	—	—	—	—	52	51	4
Total from All Countries	35	62	93	106	158	160	171	161	198	227	136

Table 39.
Bar Angle, &c.

TABLE 39.—IMPORTS: BAR, ANGLE, BOLT AND ROD (in thousand tons).

179

Country.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Sweden	54	50	58	62	56	57	58	53	46	31	34
Belgium	9	11	7	6	7	8	9	12	34	85	109
Total from All Countries	63	61	65	68	63	65	67	65	80	116	143

	1897.		1898.		1899.		1900.		1901.		1902.		1903.	
	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.
1	195	43	189	49	311	78	315	51	176	97	215	112	310	132
2	2,681	205	2,626	112	4,596	188	5,785	236	2,414	216	3,270	299	2,937	423
3	455	515	432	468	494	559	657	702	357	572	331	616	328	561
4	75	42	69	25	128	48	149	35	81	32	52	28	40	71
5	1,302	1,369	1,142	1,031	1,206	1,106	1,109	1,258	1,177	1,558	1,529	1,644	1,167	2,046
6	102	366	72	239	110	198	100	171	56	186	133	199	77	174
7	273	444	253	269	246	262	282	272	336	320	307	342	254	484
8	397	471	390	382	475	412	513	391	494	474	487	555	595	575
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10	996	1,566	930	1,603	1,291	1,830	1,479	2,310	1,183	2,010	1,388	2,745	1,744	2,649
11	541	4	498	2	—	—	—	—	—	—	—	—	—	—
12	15	9	20	22	806	23	677	35	507	28	558	42	604	47
13	283	238	200	188	255	232	186	231	152	174	175	201	654	620
14	181	153	189	169	222	183	253	225	131	217	124	220	106	266
15	237	95	262	83	308	103	344	139	325	129	311	165	286	163
16	536	440	497	419	590	532	637	694	423	582	450	560	670	1,197
17	141	227	137	220	166	228	179	271	137	255	137	252	158	257
18	—	—	—	—	123	127	146	204	128	130	152	201	175	239
19	548	579	577	481	666	477	637	558	564	551	441	631	271	560
20	822	1,252	823	1,234	712	1,209	777	1,280	666	1,140	716	1,144	713	1,254
21	113	4	88	6	94	35	54	44	21	18	103	40	58	20
22	1,147	351	1,221	343	1,418	465	1,488	586	1,101	510	1,155	611	1,212	706
23	56	—	32	—	40	—	43	—	82	—	71	—	145	—
24	2,327	711	2,116	628	2,518	651	2,879	1,098	2,738	966	3,205	1,133	2,927	1,031
25	814	179	764	218	1,030	323	1,138	373	530	285	539	441	—	—
26	—	—	—	—	—	—	—	—	—	—	—	—	242	427
27	754	383	546	358	527	500	523	499	652	492	425	738	573	703
28	4	—	—	—	1	—	—	—	—	—	—	2	—	—
14,995		9,646	14,078	8,549	18,333	9,769	20,350	11,666	14,441	10,948	16,220	12,921	16,246	14,596

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TABLE 40.—IMPORTS: OLD BROKEN, AND OLD CAST, IRON AND STEEL (in thousand tons).

Table 40.
Old Iron and Steel.

	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Foreign Countries	6	11	11	11	9	19	22	19	42	35	11
British Possessions	8	6	5	4	11	6	10	12	2	4	6
Total from All Countries ..	14	17	16	15	20	24	32	31	44	39	17

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TABLE 41.—IMPORTS: UNWROUGHT STEEL (in thousand tons).

Table 41.
Unwrought Steel.

United States of America ..	—	—	—	—	26	29	59	158	51	4	1
Total from All Countries ..	9	9	11	17	40	40	77	179	153	281	274

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TABLE 42.—IMPORTS: GIRDERS, BEAMS AND PILLARS (in thousand tons).

Table 42.
Girders, Beams and Pillars.

Holland	22	18	13	16	14	15	12	13	18	22	31
Belgium	44	51	56	59	61	83	74	77	102	104	113
Total from All Countries ..	66	69	69	75	76	103	85	93	123	127	145

TABLE 43.—IMPORTS: IRON AND STEEL, UNENUMERATED* (in thousand tons).

183

	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total from All Countries ..	150	155	165	189	173	219	227	266	321	323	561

* Includes nails, screws, rivets; tram and railway rails; steel bars and angles; hoops and strips; wire rods; bolts and nuts, &c.

TABLE 44.—SUMMARY: VALUES OF IRON AND STEEL IMPORTED FROM FOREIGN COUNTRIES AND BRITISH POSSESSIONS (in thousand £).

184

Description.	1893.		1894.		1895.		1896.	
	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.
1 Pig and Puddled Iron	174	—	300	—	431	—	441	—
2 Iron Bars, Angles, Rods and Sections, Wrought ..	593	—	556	—	549	—	570	—
3 Old Iron and Steel	16	18	37	15	38	11	48	11
4 Girders, Beams, Joists and Pillars	419	—	428	—	436	—	467	—
5 Tyres and Axles	—	—	38	—	22	—	35	—
6 Steel, Unwrought or Part Wrought	90	—	77	—	95	—	156	2
7 Cycles, including those with Motors	—	—	—	—	—	—	—	—
8 Unenumerated Iron and Steel	2,536	10	2,583	12	2,816	23	4,049	24
9 Total	3,828	28	4,019	27	4,387	34	5,766	37

TABLE 44—concluded.

185

	1897.		1898.		1899.		1900.		1901.		1902.		1903.	
	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.	Foreign Countries.	Brit. Possessions.
1	516	1	534	3	616	4	797	7	676	117	683	116	546	10
2	538	—	—	—	577	—	656	—	735	—	1,083	1	1,113	—
3	40	29	55	15	62	28	68	44	117	5	102	11	35	16
4	485	—	646	—	632	—	706	—	829	—	821	—	933	—
5	25	—	38	—	38	—	44	—	36	—	35	—	66	—
6	276	—	250	2	431	3	1,207	11	1,104	2	1,415	—	1,306	2
7	524	3	611	1	285	1	194	1	175	2	—	—	—	—
8	2,632	22	2,921	48	3,253	20	3,870	12	4,059	8	3,213	6	2,255	17
9	5,036	55	5,055	69	5,894	56	7,542	75	7,731	134	7,352	134	6,254	15

(c) IMPORTS OF IRON AND STEEL INTO BRITISH COLONIES.

186

The following series of tables have been compiled from the Official Trade Returns of the various Colonies. The figures are given separately for the United Kingdom, Germany, and United States of America :—

187

TABLE 45.—IMPORTS OF IRON AND STEEL INTO CANADA WITH PRINCIPAL COUNTRIES OF ORIGIN (in thousand \$).

Table 45.
Imports into
Canada.

Year.	United Kingdom.	United States.	Germany.	Total from all Countries.
1896-7	2,818	3,769	106	6,714
1897-8	2,710	7,646	300	10,707
1898-9	2,674	8,333	90	11,148
1899-1900	6,010	12,342	230	18,732
1900-1	3,683	11,205	245	15,301
1901-2	6,747	10,904	1,635	19,590

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TABLE 46.—IMPORTS OF IRON AND STEEL INTO NATAL, WITH PRINCIPAL COUNTRIES OF ORIGIN (in thousand £).

Table 46.
Imports into Natal.

Year.	United Kingdom.	United States.	Germany.	Total from all Countries.
1896	669	55	—	779
1897	878	57	—	1,054
1898	678	41	11	802
1899	707	62	18	845
1900	759	38	21	846
1901	1,243	83	27	1,407

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TABLE 47.—IMPORTS OF IRON AND STEEL INTO CAPE OF GOOD HOPE FROM PRINCIPAL COUNTRIES (in thousand £).

Table 47.
Imports into
Cape Colony.

Year.	United Kingdom.	United States.	Germany.	Total from all Countries.
1896	1,950	119	101	2,374
1897	2,090	215	81	2,478
1898	2,278	151	68	2,586
1899	1,428	371	65	1,949
1900	1,735	273	50	2,254
1901	2,203	342	61	2,773

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TABLE 48.—IMPORTS OF IRON AND STEEL INTO INDIA FROM PRINCIPAL COUNTRIES (in thousand £).

Table 48.
Imports into
India.

Year.	United Kingdom.	United States.	Germany.	Total from all Countries.
1897-8	2,150	3	32	2,875
1898-9	1,608	29	36	2,309
1899-1900	1,238	25	17	1,613
1900-01	1,472	49	36	2,093
1901-2	1,371	23	52	1,936
1902-3	1,523	37	45	2,020

Table 49.
Imports into
Australasia.

TABLE 49.—IMPORTS OF IRON AND STEEL INTO THE AUSTRALASIAN
COLONIES FROM PRINCIPAL COUNTRIES (in thousand £).

191

Year.				United Kingdom.	United States.	Germany.	Total from all Countries.
1896	..	..	..	2,929	136	192	4,190
1897	..	..	..	3,194	155	280	4,440
1898	..	..	..	3,157	376	232	4,400
1899	..	..	..	3,690	623	237	5,499
1900	..	..	..	4,922	697	346	7,081
1901	..	..	..	4,529	987	375	6,761

(D) EXPORTS FROM GERMANY.

Table 50.
Exports from
Germany.

TABLE 50.—VALUE OF IRON AND STEEL EXPORTS FROM GERMANY IN
EACH OF THE YEARS 1893-1902 (in millions of marks).

192

Year.				Heavy Iron Ware	Fine Iron Ware.	Sheets, Rails, Ingots	Angle Iron.	Forge Iron.	Sheets and Plates.	Rails.	Iron Ware.	Pig Iron.	Total.
1893	..	..	..	66	27	4	11	24	11	7	26	6	182
1894	..	..	..	68	27	3	13	30	12	10	26	8	197
1895	..	..	..	79	33	5	16	28	17	10	26	7	221
1896	..	..	..	95	37	5	19	29	19	12	28	8	252
1897	..	..	..	103	37	4	18	28	20	11	27	5	253
1898	..	..	..	118	37	3	22	31	23	13	27	10	284
1899	..	..	..	139	47	3	29	27	26	13	25	12	321
1900	..	..	..	139	71	4	31	25	30	20	30	10	360
1901	..	..	..	144	78	16	35	35	35	20	33	9	405
1902	..	..	..	162	80	50	38	37	35	35	29	19	485

Table 51.
Percentage of
Exports from
Germany.

TABLE 51.—PERCENTAGE BY VALUE OF TOTAL GERMAN EXPORTS—
IRON AND STEEL.

193

Year.				Heavy Iron Ware.	Fine Iron Ware.	Sheets, Rails, Ingots.	Angle Iron.	Forge Iron.	Sheets and Plates.	Rails.	Iron Ware.	Pig Iron.	Total.
1893	..	..	..	2.0	.8	.1	.3	.7	.3	.2	.8	.2	5.4
1894	..	..	..	2.2	.9	.1	.4	1.0	.4	.3	.9	.3	6.5
1895	..	..	..	2.3	1.0	.1	.5	.8	.5	.3	.8	.2	6.5
1896	..	..	..	2.5	1.0	.1	.5	.8	.5	.3	.7	.2	6.6
1897	..	..	..	2.7	1.0	.1	.5	.7	.5	.3	.7	.1	6.6
1898	..	..	..	2.9	.9	.1	.5	.8	.6	.3	.7	.3	7.1
1899	..	..	..	3.2	1.1	.1	.7	.6	.6	.3	.6	.3	7.5
1900	..	..	..	2.9	1.5	.1	.6	.5	.6	.4	.6	.2	7.4
1901	..	..	..	3.2	1.7	.3	.8	.8	.8	.4	.7	.2	8.9
1902	..	..	..	3.4	1.7	1.0	.8	.8	.7	.7	.6	.4	10.1

Relation between
Home and Export
Trades.

(E) DEVELOPMENT OF HOME AND EXPORT TRADE.

194

In the following table we have attempted to show, as concisely and completely as the materials rendered practicable, the growth or decay of the various branches of the iron and steel trades. All the quantities are here

conversions here given to be made have been calculated from the cost sheets, which have been supplied, and from the estimates given by recognised authorities. It may be pointed out that, although some of these columns are approximate only, the general character of the conclusions which they lead to cannot be, from a statistical point of view, materially affected thereby :—

TABLE 52.—RELATION BETWEEN HOME AND EXPORT TRADES.

Table 52.

Year.	Make of Pig Iron.	Exports (in estimated equivalent of Pig Iron).					Total of Domestic Pig left for home consumption.
		Pig Iron.	Iron and Steel Manufacturers thereof.	Hardware, Cutlery, Implements, Tools, &c.	Machinery.	Total Exports.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	thous. tons.	thous. tons.	thous. tons.	thous. tons.	thous. tons.	thous. tons.	thous. tons.
1876	6,556	910	1,601	97	300	2,908	3,648
1877	6,609	923	1,800	94	280	3,097	3,512
1878	6,381	882	1,676	93	312	2,963	3,418
1879	5,995	1,223	1,780	85	303	3,391	2,604
1880	7,749	1,632	2,395	97	386	4,510	3,239
1881	8,144	1,482	2,767	108	415	4,772	3,372
1882	8,587	1,758	3,079	117	497	5,451	3,136
1883	8,329	1,561	2,976	115	500	5,215	3,314
1884	7,812	1,270	2,700	103	545	4,618	3,194
1885	7,415	961	2,605	93	462	4,121	3,294
1886	7,010	1,045	2,749	92	422	4,308	2,702
1887	7,560	1,158	3,370	95	464	5,087	2,473
1888	7,999	1,036	3,481	110	521	5,148	2,851
1889	8,323	1,190	3,561	113	611	5,475	2,848
1890	7,904	1,145	3,382	110	655	5,292	2,612
1891	7,406	840	2,861	103	628	4,432	2,974
1892	6,709	767	2,332	94	545	3,738	2,971
1893	6,977	840	2,621	88	550	4,099	2,878
1894	7,427	831	2,170	82	560	3,643	3,784
1895	7,703	867	2,339	84	593	3,883	3,820
1896	8,659	1,060	2,952	97	669	4,778	3,881
1897	8,796	1,201	2,998	95	633	4,927	3,869
1898	8,609	1,043	2,646	93	721	4,503	4,106
1899	9,420	1,380	2,776	100	766	5,022	4,398
1900	8,960	1,428	2,525	102	757	4,812	4,148
1901	7,923	839	2,466	102	678	4,085	3,844
1902	8,680	1,103	2,964	107	705	4,879	3,801

TABLE 52.—Concluded.

Imports (in estimated equivalent of Pig Iron).					Percentage of home consumption of Domestic Pig to total consumption.	Percentage of total make of Pig Iron required for Iron and Steel export trade.	Percentage of total make of Pig Iron exported.	Year.
Pig Iron.	Iron and Steel.	Hardware, Cutlery, &c.	Total Imports.	Total Home consumption.				
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
thous. tons.	thous. tons.	thous. tons.	thous. tons.	thous. tons.	per cent.	per cent.	per cent.	
193	..	..	193	3,841	95.0	44.4	13.9	1876
..	220	..	220	3,732	94.1	46.4	14.0	1877
..	260	..	260	3,678	92.9	46.4	13.8	1878
..	259	..	259	2,863	90.9	60.6	20.4	1879
..	344	..	344	3,583	90.4	58.2	21.1	1880
..	353	..	353	3,730	90.4	58.6	18.2	1881
..	389	..	389	3,525	89.0	63.5	20.5	1882
..	396	..	396	3,710	89.3	61.1	18.3	1883
..	375	..	375	3,569	89.5	59.1	16.3	1884
..	370	..	370	3,664	89.9	55.6	13.0	1885
..	352	..	352	3,054	88.5	61.4	14.0	1886
..	389	..	389	2,862	86.4	67.3	15.3	1887
37	440	..	477	3,328	85.7	64.4	13.0	1888
70	441	..	511	3,359	84.8	65.8	14.3	1889
62	405	..	467	3,079	84.8	65.7	14.5	1890
62	394	..	456	3,430	86.7	59.7	11.3	1891
57	376	..	433	3,404	87.3	55.7	11.4	1892
35	369	..	404	3,282	87.7	58.8	12.0	1893
62	370	..	432	4,216	89.8	49.1	11.2	1894
93	391	..	484	4,304	88.8	50.4	11.1	1895
106	441	..	547	4,428	87.6	55.2	12.2	1896
158	447	20	625	4,494	86.1	56.0	13.7	1897
160	540	26	726	4,832	85.0	52.3	12.1	1898
171	592	35	798	5,196	84.6	53.3	14.7	1899
181	773	33	987	5,135	80.8	53.7	15.9	1900
198	906	39	1,143	4,987	77.1	51.5	10.6	1901
227	1,130	45	1,402	5,203	73.0	56.2	12.7	1902

The following explanatory notes of some of the principal columns in the above table are added:—

Col. 2.—Total make of pig iron, as given in Home Office Returns.

Cols. 3-7.—Exports of iron and steel, hardware, cutlery, &c., and machinery.

Col. 8.—Obtained by subtracting (7) from (2).

Cols. 9-12.—Imports of iron and steel, and hardware, cutlery, &c.

Col. 13.—Obtained by adding (8) and (12).

Col. 14.—Represents percentage of figures in (8) to figures in (14). Shows extent to which home requirements of iron and steel manufacture are supplied by foreign importations.

Col. 15.—Represents percentage of figures in (7) to figures in (2). Shows proportion of total output of pig iron required for the various branches of the iron and steel export trade.

Col. 16.—Represents percentage of figures in (3) to figures in (2). Shows proportion of total output of pig iron exported annually without further manufacture.

(F) STATE OF EMPLOYMENT IN THE IRON AND STEEL TRADES.

The following table has been compiled from the returns of the Board of Trade, published monthly in the *Labour Gazette*. It was not practicable to carry this return further back than the year 1898, because of the difference in the character of the returns prior to this date. These returns apply to a limited number only of those engaged in the iron and steel trades of the United Kingdom. From the figures given, the average number of workmen and shifts worked in each quarter in the shops and unions making returns, are given in cols. (1) and (2). The product of these two columns gives Col. (3), which thus becomes a measure of the total average volume of employment available in each period. Col. (4) gives the total number of workmen, each working 5½ shifts per week, who would be required to do this amount of work. Col. (5) shows the number by which the numbers in (4) for the same period are greater or less than the average for the whole of the period 1898-1904. These figures are re-stated in (6) as percentages of the average volume of employment.

Table 53.

TABLE 53.—STATE OF EMPLOYMENT.

Period.	Average No. employed.	Average shifts worked.	Total No. of Shifts.	Estimated No. of men working 5½ shifts.	Above (+) or below (-) the average.	Percentage of employment above (+) or below (-) the average.
	(1)	(2)	(3)	(4)	(5)	(6)
1898—Jan.—Mar.	74,520	5.52	411,400	74,800	— 1,780	— 2.3
April—June	76,726	5.53	424,300	77,145	+ 565	+ 0.7
July—Sept.	78,156	5.49	429,100	78,018	+ 1,438	+ 1.9
Oct.—Dec.	80,171	5.59	448,300	81,509	+ 4,929	+ 6.4
1899—Jan.—Mar.	79,529	5.59	444,600	80,836	+ 4,256	+ 5.7
April—June	80,820	5.58	450,900	81,834	+ 5,254	+ 6.8
July—Sept.	81,227	5.54	450,000	81,812	+ 5,232	+ 6.8
Oct.—Dec.	83,030	5.63	467,500	85,000	+ 8,420	+ 11.4
1900—Jan.—Mar.	82,795	5.59	462,800	84,145	+ 7,565	+ 9.9
April—June	83,089	5.55	461,000	83,818	+ 7,238	+ 9.4
July—Sept.	76,399	5.37	410,600	74,655	— 1,915	— 2.5
Oct.—Dec.	79,998	5.32	425,600	77,382	+ 802	+ 1.5
1901—Jan.—Mar.	78,609	5.23	411,300	74,782	— 1,798	— 2.3
April—June	76,981	5.34	411,000	74,727	— 1,853	— 2.4
July—Sept.	78,879	5.27	415,700	75,582	— 998	— 1.3
Oct.—Dec.	79,205	5.43	407,400	74,073	— 2,507	— 3.3
1902—Jan.—Mar.	77,575	5.35	416,000	75,637	— 943	— 1.2
April—June	77,101	5.42	417,900	75,982	— 598	— 0.8
July—Sept.	77,172	5.16	398,400	72,436	— 4,144	— 5.4
Oct.—Dec.	75,089	5.35	401,700	73,036	— 3,544	— 4.6
1903—Jan.—Mar.	73,759	5.39	397,500	72,273	— 4,307	— 5.6
April—June	74,085	5.37	397,800	72,327	— 4,253	— 5.7
July—Sept.	74,517	5.38	400,900	72,891	— 3,689	— 4.8
Oct.—Dec.	73,494	5.33	391,700	71,219	— 5,361	— 7.0
1904—Jan.—Feb.	71,700	5.26	377,200	68,582	— 7,998	— 10.4

The figures in Col. 6 should be read as follows:—

In the period January to March, 1898, the average amount of employment in the Iron and Steel trades was 2.3 per cent. below the average of the whole period. This rose steadily until, at the end of 1899, the average amount

of employment was 11·4 per cent. *above* the average of the whole period. By the beginning of 1904, the amount of employment had fallen to 10·4 per cent. *below* the average of the preceding six years. The figures in Col. (5) are represented graphically in paragraph 68 of the Report.

200 The British Tube Trade Association (English Section) also put in an exhaustive series of tables showing the **Tube Association.**
amount of exports of tubes, etc., from United Kingdom, Germany, United States and other Countries, and of
imports into the principal British markets abroad, including the Colonies. The substance of these tables is
embodied in the summaries of the evidence of the Association printed in this Appendix.

201 SECTION XV.—CLASSIFICATION OF THE IRON AND STEEL TRADES **Classification.**
ADOPTED FOR THE PURPOSES OF THIS REPORT.

(Based on the Classification adopted by the Board of Trade.)

IRON.—Fig.

Puddled Iron.

Bars.

Angles, Bolts and Rods.

Cast, Wrought and Manufactures thereof, unenumerated.

IRON OR STEEL.—RAILROAD.—Rails.

Chairs and Sleepers.

Unenumerated.

WIRE.

SHIP, BRIDGE, BOILER AND OTHER PLATES AND SHEETS.

Galvanised and Corrugated Black Plates for Tinning, Sheets and Boiler Plates.

HOOPS.

ANCHORS, CHAINS AND CABLES.

TUBES.

PIPES.

NAILS, SCREWS AND RIVETS.

BOLTS AND NUTS.

STEEL.—INGOTS, BLOOMS, BILLETS, SLABS.

BARs, ANGLES, RODS, AND SHAPES OR SECTIONS.

ARMOUR PLATES.

SHEETS.

TINNED PLATES AND SHEETS.

TYRES, AXLES AND WHEELS

SECTION XVI.—REPLIES TO FORMS OF INQUIRY.

Of the questions included in the Forms (see Section X.), those relating to the nature of the trade and the number of employees of the replying firms were intended merely to obtain a basis for the classification of the Iron and Steel industry, and to indicate the standing of firms making returns. Other questions, such as those relating to the percentage of home, foreign and Colonial trade, annual sales, wages, &c., were included with a view of obtaining data for the statistical calculations necessary for the purposes of the Inquiry.

For example, out of the materials furnished in reply to Question 3, on Form No. I., the following table has been compiled :—

(A) IMPORTS COMPETING WITH BRITISH PRODUCTS.

Imports :

QUESTION 3 (FORM I.): *What are the principal articles that you manufacture for the home trade in respect of which you experience foreign competition?*

United States.

UNITED STATES :—

Air Compressors.
Angles.
Bars.
Bright Drawn Steel.
Cast Iron.
Cast Iron Pipes.
Chains.
Charcoal Iron.
Corrugated Sheet Bars.
Electrical Conductor Rails (Tram).
Fencing Wire.
Ferro-Manganese.
Foundry Iron.
Gas, Water, Iron and Steel Boiler Tubes.
Girders.
Hairpin Wire.
Hoop Iron and Steel.
Iron Wire.

Joists or Beams.
Light Steel Rails.
Marine Engines.
Netting Wire.
Pig Iron.
Radiators.
Rails.
Rivet Bars.
Rolled Steel.
Rollers.
Saws.
Seamless Boiler Tubes.
Sheet Steel.
Shoe Rivet Wire.
Slabs.
Spiegeleisen.
Spring Steel.
Steel and Iron Shafting.
Steel and Iron-framed Buildings.

Steel Billets.
Steel Blooms.
Steel Joists.
Steel Rails.
Steel Structural Roofwork.
Steel Wire.
Tin Plate Bars.
Tool Steel.
Tramway Wheels.
Tube Strips.
Wheels and Axles.
Wire Nails.
Wire Netting.
Wire Rods.
Wire Rope.
Wrought Iron and Steel Tubes and Fittings.
Wrought Iron Tubes.

Germany.

GERMANY :—

Angles.
Bars.
Bar Iron.
Black and Galvanised Sheets.
Black Rolled Steel.
Brackets.
Brakes.
Buckling Cylinders.
Cast Steel Rudders.
Cast Steel Stern Frames.
Colliery and Blast Furnace Plant.
Compound Girders.
Corrugated Furnaces.
Corrugated Sheet Bars.
Electrical Conductor Rails.
Engine Fittings.
Engine Shafting.
Fencing Wire.
Ferro-Manganese.
Files.
Forgings and Castings.
Gas, Water, Iron and Steel Boiler Tubes.
Girders.
Hairpin Wire.
Harbour Plant.
Hoops and Rounds.
Hoop Iron and Steel.
Iron Hoops and Flats.
Iron Sheets.
Iron and Steel Rods.
Iron Wire.
Joists or Beams.
Land Engine Forgings.
Light Iron Rails.
Light Steel Rails.

Locomotive Castings.
Machined Steel.
Marine Castings.
Marine Engine Forgings.
Netting Wire.
Nut Iron.
Paper Machine Wire.
Pig Iron.
Plated Beams and Girders.
Plating Bars.
Propellers.
Railway Trucks and Tipping Wagons.
Railway and Contractors' Plant.
Refined Iron.
Rivet Bars.
Rivets.
Rod Iron.
Rolled Iron Rods.
Rolled Steel.
Rollers.
Rolls for Steel Plates.
Rough Turned Steel Connecting Rods.
Scroll Irons for Light Vans.
Sheared Iron.
Sheet Steel.
Ship Castings.
Shoe Rivet Wire.
Slabs.
Slit Iron Rods.
Small Iron Rounds and Squares.
Smithing Bars.
Spiegeleisen.
Spring Steel.

Steel and Iron-framed Buildings and Stanchions.
Steel Bars.
Steel Beams.
Steel Boiler Plates.
Steel Billets.
Steel Blooms.
Steel Castings.
Steel Clips.
Steel Flats and Squares.
Steel Music Wire.
Steel Rails.
Steel Shafting and Forgings for Marine Engines.
Steel Structural and Roofworks.
Steel Wire.
Stern and Rudder Frames.
Straight Iron Wire.
Strip.
Tank Sheets.
Tee Iron and Steel.
Tinplate Bars.
Thin Sheets.
Tram Rails.
Tube Strips.
Tyres.
Umbrella Frames.
Wheel Plates.
Wire.
Wire Cloth and Fibre.
Wire Nails.
Wire Netting.
Wire Rods.
Wrought Iron and Steel Tubes and Fittings.

206	BELGIUM :—	Nut Iron. Plated Beams and Girders. Rails. Rivet Bars. Rod Iron. Rolled Steel, Girders, and Compound Girders. Rolled Steel Rods. Sheared Iron. Sheet Steel. Slabs. Small Iron Rounds and Squares. Small Steel Castings. Smithing Bar for Shipyards. Spring Steel. Stanchions. Steel Bars. Steel Beams.	Steel Billets. Steel Blooms. Steel Boiler Plates. Steel Flats and Squares. Steel Joists and Plates. Steel Structural and Steel Roof Work. Steel Tinplate Bars. Strip. Tram Rails. Tramway Mouldings. Tube Strips. Tyres and Axles. Wheel Plates. Wire Nails. Wrought Iron.	Belgium.
207	FRANCE :—	Rods. Scroll Irons for Light Vans. Small Machine Tools and Miners' Tools. Spring Clips.	Tinned Goods. Wheel Plates. Wire.	France.
208	SWEDEN :—	Wire Rods for Ropes.	Wrought Iron Nails.	Sweden.
209	AUSTRIA :—	Tool Steel.		Austria.
210	DENMARK :—	Rough-turned Steel.	Shaft and Connecting Rods.	Denmark.
211	NORWAY :—	Horse Nails.		Norway.
212	ITALY :—	Horse Nails.		Italy.
213	CANADA :—	Pig Iron.		Canada.
214	RUSSIA :—	Pig Iron,		Russia.

- 215 The following are typical of all the replies received upon each of the subjects dealt with in the questions irrespective of the views of the responding firms. The firms who think that no remedy is required for the existing conditions number less than 5 per cent. of the total.

(B) SOURCES OF SUPPLY.

- 216 Questions 3 and 4 (Form IV.):—*Give particulars of the principal supplies of the materials, raw and partly manufactured, required in your industry, and state from what countries they are derived? State if any of the above-mentioned materials, now imported from foreign countries, were formerly obtained in the United Kingdom, and, if so, what has caused the change?* Sources of Supply.

- 217 FIRM No. 155.

Our materials, that is bar iron and steel, and sheet and plate steel, were formerly of British manufacture. Change has been caused by the foreign material being offered at much lower prices. 75 per cent. of the materials we use are of foreign manufacture, whereas, 25 years ago, all the materials used were of British make.

- 218 FIRM No. 312.

All the materials mentioned as coming from abroad, that is, Gellivase ore from Sweden, manganiferous ores from Greece, magnesite bricks and magnesite from Austria; none has previously been obtained in the United Kingdom.

Bar iron for melting for crucible cast steel.—This is all imported from Sweden.
Siemens-Martin and also Bessemer billets.—For better qualities of goods required, and this is the bulk, they are imported from Sweden; for cheaper goods, English made will do.
Wire rods.—We only import from Sweden.
What we import is only Swedish. On account of the quality this cannot be obtained elsewhere.
We import nothing below cost, and if the goods (raw and semi-raw materials) we import were taxed, we should be worse off than now.

FIRM No. 350.

220

Our principal raw material is steel billets. We obtain these from England, occasionally Scotland, Wales, Germany, and America.

Prior to 1900, we bought practically no steel from abroad. The change is caused by two factors (1) an increase of cost in this country; (2) a decrease abroad. The former is of the most importance. No doubt ore is dearer, but the chief factor is the increase in fuel, largely due to the advance in miners' wages. In 1895, we bought steel billets d/d here at £3 16s. 3d. If the English steel works to-day were to quote such a price, the importation of foreign steel would stop at once. The sober truth is that we are facing a period of severe trade depression with a wages list only fractionally lower than that fixed in the boom years 1899-1900, and the increase in cost of production resulting therefrom has not been seriously diminished by the adoption of modern and labour-saving machinery.

FIRM No. 358.

221

All our steel was made locally until a few years ago. Cause of change was improved methods of manufacture by German steel makers.

FIRM No. 549.

222

Obtain iron for melting into crucible cast steel from Sweden.

FIRM No. 567.

223

In the manufacture of steel we use Swedish iron and Cumberland hematite, mostly Swedish.

FIRM No. 692.

224

Swedish pig iron from Sweden.

Campanil iron ore from Spain.

Swedish pig iron is, we believe, one of the principal exports to this country from Sweden, and owing to the peculiar qualities possessed by this iron it is largely used in this country, as iron having the same qualities cannot be produced here.

With regard to Spanish ore, at one time we used a considerable quantity of this material, but owing to the boom in trade a few years ago, the price rose very materially, and we found we were able to obtain Cumberland ore of much better quality and which better suited the purpose for which we required it.

FIRM No. 752.

225

We formerly purchased all our supplies of steel from English works, but the bulk the last few years has been obtained from abroad owing to the question of price.

FIRM No. 768.

226

Steel billets, which form our staple raw material, were formerly obtained in the United Kingdom. Much of the British material has now been displaced by billets coming from Germany and America.

FIRM No. 808.

227

Steel sheets, steel plate cuttings, steel strip.—Great Britain, chiefly South Staffordshire.

Wire.—Germany, United States and Birmingham.

Conditions generally unchanged for some years, but we formerly obtained all our wire in this country, but have been forced to buy from cheapest market to compete with the foreign wire nails which are imported in immense quantities at a relatively much lower price than the cheapest foreign wire.

FIRM No. 836.

228

Pig iron.—Made in Scotland and North of England from hematite ore got mostly in Spain.

Ore, hematite.—Spain and Russia.

Coal.—Lanarkshire coalfields.

Many years ago, hematite ore was got from the North of England. As the mines there are to a large extent exhausted, it is necessary to import.

FIRM No. 842.

229

Pig iron, coke and coal, sand, paints from Great Britain.

Varnishes from Great Britain and America.

Wood from Canada and the Baltic.

Varnishes were formerly got by us entirely from Great Britain. America is now doing a share of the trade, due to their cheaper prices for similar qualities.

230 FIRM No. 844.

Our billets were formerly obtained in this country. The cause of the changed condition is, we understand, the over-production in Germany and the United States.

Until 1898, all our partly-manufactured materials were bought locally. In 1898 to 1901, we bought steel sheet bars and slabs from the United States in large quantities, and have bought small quantities only during 1902 and 1903.

Germany was not a source of supply until 1900, since which we have obtained the bulk of the foreign steel we use from this source in largely increasing quantities.

Recently Canada has sold us some steel billets in this district, but we have not been able to obtain a favourable price from this source. The cause of this change is, we understand, due to over-production of partly-manufactured materials in excess of local requirements, especially in Germany and Canada.

231 FIRM No. 862.

Manganiferous iron ore, formerly obtained in Devonshire, is now obtained from India, on account of the latter being of richer quality, that is, containing a higher percentage of manganese.

232 FIRM No. 886.

The bulk of the raw material required in our industry, such as coal, ironstone, &c., are raised from our own mines, the smelting of same being carried on at our blast furnaces. We do not require supplies of any of our raw material from abroad. We use quantities of Northampton and Lincolnshire ores. It should, however, be noted in connection with the steel industry, that a large quantity of partly manufactured material is imported by English works from America, Germany, and Belgium, in the form of billets, blooms, slabs, tin bars, &c. The crude steel in the shape of billets, blooms, slabs, tin bars, imported into this country, was formerly made by home manufacturers, but foreign material can now be purchased and delivered here at prices below our own cost of production, hence the change from English to foreign material.

233 FIRM No. 911.

Pig iron.—We obtained this material from Great Britain exclusively until 1901. We then bought some dumped pig iron and have since bought considerable quantities, particularly during 1902 and 1903, from Germany, basic and hematite. Spain, hematite. Russia, about 10,000 tons in 1902, owing to the surplus stock of an iron works in south Russia being sold off at any price it would fetch. We have always purchased our raw material in England except when the opportunity arose of buying dumped material at less than the cost of production in this country.

234 FIRM No. 916.

Until quite recently, all our supplies of pig iron and steel were derived from this country and Scotland, but a short time ago, the advantages in price offered by the German makers, induced us to purchase some of their material, which is now under trial, and so far has proved satisfactory.

235 FIRM No. 984.

Until within the last seven years, all material we use was exclusively obtained from Great Britain. The use of foreign raw and semi-manufactured material has only prevailed since 1897. The sole reason for the introduction of foreign raw material has been over-production abroad, and the dumping of the surplus on the British market at any price it would fetch.

236 FIRM No. 1,003.

Wire rods we formerly made ourselves, until we found it quite impossible to make them at the price at which we could buy them. The same applies to sheet bars. This has thrown idle three Siemens-Martin steel furnaces, a cogging mill and a wire rod mill, in all, about £20,000 worth of plant, and dispensed with the labour of about 250 men. During the last ten years we have not found the German supplies to be intermittent, and the trade seems to be firmly established.

237 FIRM No. 1,171.

We used at one time to buy all English wire rods, but of latter years the English firms could not compete at the price the Germans were prepared to take. Consequently, we had to buy German, in order to compete with our competitors who did so, much against our wish.

238 FIRM No. 1,276.

A large number of steel blooms and ingots for forging are imported from Germany, also some blooms from America (United States). We do not use any of this foreign steel, however, as although the price is cheaper we do not think that the quality is so good. The cause of the change is the cheaper selling price of the foreign material. The German steel worker's wages are much lower than the British and this enables the German manufacturer to produce steel cheaper than it is done here.

239 FIRM No. 1,323.

American pig iron was, up to recently, much cheaper than English iron of equal quality. We are not manufacturers of rolled steel joists, but we use them largely in our constructional work and we are unable to take advantage of the low-priced foreign joists, owing to the uncertainty as to when delivery would be made.

Iron ores formerly produced from our own mines. Spanish ores took their place, because of greater purity for acid steel working; and now that basic working is available, miners' wages render the working of our own ores in sufficient quantity too costly.

High grade pig iron from Sweden.

Spiegel Eisen from Sweden.

Iron ore from Spain.

Have invariably obtained same from our present sources of supply. English material, although readily obtainable and cheaper, not being equal in quality.

Steel slabs or billets imported from Germany and the United States. The above-mentioned materials were formerly obtained in England and Scotland, and our reason for buying German and American slabs and billets, was the reduced price at which we could obtain them, as compared with home manufactures.

Pig iron.—Produced chiefly in England and Scotland.

Scrap materials.—Produced chiefly in England, Scotland and Ireland.

Fettling ore.—From Spain.

Steel billets.—United States, Germany, and Canada.

Coal.—Obtained locally.

Steel billets were formerly obtained in the United Kingdom, but the foreign price being cheaper, caused the change.

(C) FOREIGN COMPETITION AT HOME.

Questions 4 and 5 (Form I.): —Are any articles similar to those manufactured by you imported into this country below your cost price? If so, please state particulars as far as you can.

Have you any information leading you to conclude that such imported articles are placed upon the British market at or below the normal cost of production in the country of origin? If so, please state particulars as far as you can?

Our customers are buying forgings rough-turned cheaper than we can do the forgings only.

In one or two instances we have special and accurate information that wire is regularly sold in England under cost. A German firm boast their weekly output is never less than 750 tons and their average sales in Germany are 500 tons per week at a profitable price. The balance is sold every week by their agents in England at the best possible figure that can be obtained, which, needless to say, in every case is below the cost of production, but owing to the fact that a large and regular output is by this means kept up their working expenses and dead charges are kept very low, so much so that on comparison with ours, in a confidential conversation, we find the advantage on their side at least 33 per cent. The great factor is the profitable weekly sale in Germany of the greater part of their make, and the certain sale at a slight loss of a sufficient quantity to keep the whole of their works at full swing. So certain is their profit in their own country that in some cases we have been able to take orders even in their own neighbourhood, notwithstanding a duty of 3 marks per 100 kgs., but, of course, as soon as this fact is discovered, the customer receive a much lower price from the German maker, which promptly puts us out of court.

The advantages to be obtained from the system are very great in their works; for instance, owing to the fact that their orders are regular, one man can be kept at one size all his time, consequently he is able to work two blocks (wire machines) instead of one as here. Again, owing to this fact, the workman ceases to be a skilled man and is paid accordingly, whilst we must, owing to the irregularity of our trade, employ none but skilled men who are capable of doing anything that is asked of them.

In one class of wire we know that the advantages from this are so great that they can produce the material on the market at a cost (over the cost of material) of 6s. 6d. per ton, ours being, for exactly the same thing, 12s. 10d. per ton.

Great inroads have been made in our home markets in the shape of imported structural material, namely beams or joists, and also largely in bars, mainly rivet bars.

Raw steel, in the shape of blooms, billets, and slabs, joists or beams, and bars and rivet bars, are all imported into this country below our cost price, and practically all imported by Germany and the United States.

With regard to Germany.—The price quoted on Dusseldorf Exchange for basic pig iron is about 58 marks per ton. (See market report "Stahl und Eisen," of January 15th, 1904.)

The cheapest and best equipped works are able to make, at present cost of raw material and wages in Germany, pig iron into joists or beams at 31 marks per ton. This cost of 31 marks per ton is bare works cost, without any charges for depreciation, general charges, or interest.

To-day's prices of Germany joists, f.o.b. Antwerp, is 82½ marks per ton, usually less a discount of 2½ per cent. The home price of beams in Germany is 105 marks per ton f.o.b. works.

With regard to the United States. We have an offer this week of Siemens Martin billets made at Pittsburg, delivered c.i.f. British port, of 75s. per ton.

This week's quotation for pig iron for steel-making purposes (see the "Iron Age" of January 21st, 1904) is about 13 dollars per ton at Pittsburg.

The best equipped works in Pittsburg will, at present raw material prices and wages, manufacture pig iron into Siemens-Martin open hearth billets at 6½ dollars per ton—that is, equal to 19½ dollars per ton at Pittsburg.

The selling price (pool price) at Pittsburg to-day for open hearth billets is 24 dollars.

The steel trade of Germany has damaged our steel rivet market very much by the introduction into this country of very low priced steel billets. The United States by their introduction of cheap steel bars have considerably interfered with our sale of steel bars for automatic machines.

248 FIRM No. 348.

We do not experience any foreign competition in our goods. Indirectly, we suffer greatly, as foreign competition has probably induced other home firms to go into our trade (other firms which used to make only common kinds of wire) and prices are cut below cost.

No goods which we manufacture are sold in this country from abroad below cost.

249 FIRM No. 350.

The purchase of German steel has enabled us to employ more men and those more regularly.

Where any considerable amount of labour is put upon this imported steel, after its importation into this country, any attempt to interfere with this trade would greatly injure us. In the case of ultimate or penultimate finished products, the case is not so clear.

The competition we experience in foreign hoop strip is not of a serious character. Our proximity to our market gives us an overwhelming advantage.

We gain far more from cheap foreign billets than we lose from competition in our own manufactures.

250 FIRM No. 478.

Competition chiefly experienced in respect to cold drawn steel. Our plant is new (twelve months) put down to save our "black" trade, which was being killed by the introduction of cold drawn bars by Yanks and Germans to engineers. The black bar, as formerly supplied by us, required turning. The bright cold drawn bar is ready for use and was sold in England at first at as high a figure as £18 per ton base. As soon as competition presents itself by the putting down of similar plant in this country, the foreigner has dropped prices to about £9 and less. They are helped to this a great deal by the action of the railway companies. It is not all foreign competition one has to fear. Our house at home requires setting in order. Railway rates, high local rates, excessive taxes brought about by reckless and extravagant spending of money, all have to be reckoned with in getting at the cost per ton.

Five years ago, we supplied £1,000 worth of steel forgings to a British shipbuilding firm for dredger work; we were paid then £19 per ton for the forgings, which had to stand the Admiralty test. Early this year, a similar order was offered to us, the work being exactly the same as before and we quoted £15 10s. per ton, which was the market price of the day; we did not get any portion of the order, but five forgings were bought in this country at £14 5s. per ton, which was practically the Sheffield price minus the carriage, and the remainder of the order (about 90 per cent. of it) went to Germany at £10 10s. per ton, delivered free British port.

251 FIRM No. 567.

Germany has taken locomotive engines and railway wheels and axles in large quantities supplying their own tyres, axles, &c.

The North-East Coast Shipbuilders and Engineers (Marine) have bought for several years almost exclusively their shafting and forgings from Germany at prices quite below our reach.

In railway material the Germans and Americans have occasionally taken orders for British or Indian locomotives and wagons and wheels and axles. Had these orders remained at home, we should have had the opportunity of taking the tyres, axles, &c., for them, whereas the Germans and Americans sublet them in their own country. The locomotives and wheels, axles, &c., we understand, have been taken at dumping prices, say, 20 per cent. below British prices.

In the mercantile marine trade, British shipbuilders have for some time been buying their forgings from Germany at very low prices—far too low for us to compete with. We supply mostly to the Admiralty under strict tests and only enter the mercantile trade when prices are favourable, but we believe those firms (British), whose chief trade is in this department, find the German prices far too low for them.

252 FIRM No. 605.

Steel tinplate bars and billets are imported from America and Belgium below cost price here. The above bars are, and have been, sold at 7s. 6d. per ton below our present cost, and are imported into Swansea, Llanelly and Newport, and, as a consequence, our works are only working half time.

253 FIRM No. 619.

We are not conscious of having suffered any diminution of trade in foreign and Colonial markets, or at home, through the competition of the United States, Germany or Belgium. Of course, if we had no competitors, our trade would be considerably increased, but we are not conscious of any inroads having been made into markets which we had previously supplied.

FIRM No. 692.

254

We have practically no serious competition so far as wagon material or steel plates are concerned in our own country from foreign competitors, but a case has come to our notice to-day where German manufacturers are offering corrugated boiler furnaces delivered here at less than half the price we are able to produce and sell at a fair profit in this country, and under the circumstances the duty to protect this particular industry against foreign competitors, would require to be a very high one. The price at which our foreign competitors have offered these goods is not sufficient, even in their own country, to pay for more than the cost of material and wages, but they have, of course, in addition to this the export bounty to assist them.

FIRM No. 711.

255

In our trade, which is special cold blast pig iron for engineering foundry work, the competition from abroad is not serious, and consists in refined pig iron, which is not so good but troublesome from the cheaper rates at which it is offered. Its stoppage by prohibitive duty would not have any important results. Our iron is a speciality and no criterion of the wholesale iron trade. The foreign competition we have is American charcoal iron, Swedish cold blast and German refined iron. These grades are hardly the same quality, but are offered as substitutes at lower prices and keep many of our customers in a state of temptation.

FIRM No. 720.

256

As pig iron makers only, we are not affected to the same extent as the manufacturers of the finished article, but indirectly we suffer through their reduced consumption of pig.

FIRM No. 768.

257

We experience foreign competition in the following articles manufactured for the home trade:—

Solid fencing wire, strand, barb, netting wire, rope wire, mattress wire, staples, nails, wire netting, spring wire, rivet wire and cable wire, wire for weaving and general purposes, &c.

Articles similar to those manufactured by them imported into this country below their cost price:—

Rivet wire, mattress wire, solid fencing wire, barb wire, nails, rope wire, &c., from America.

Solid fencing wire, strand, barb wire, netting wire, cable wire, mattress wire, staples, nails, wire netting, spring wire, wire for weaving, for drawing down and general purposes, &c., from Germany.

All the above articles are exported to this country under conditions, which pre-suppose that they are below the normal cost of production in the country of origin, seeing that in every case the price at which they are sold in this country is about £2 per ton below that which obtains in the country of origin. Specific instances bearing upon the wire trade are given in the Board of Trade Returns, Cd. 1761, pages 300-305 and 319-322. The evidence given by Mr. Holt and Mr. Schwab, and the information given on the subject of the German kartell system, receives ample confirmation from information derived from other sources. By means of kartells and heavy protective tariffs the price of wire in their home markets is consistently far above the price at which such wire is exported by the foreigners into England and her Colonies.

FIRM No. 785.

258

For example:—

1. Pig iron from U.S.A. can to-day be bought in Manchester and district at 49s. per ton, which is about the same as it costs to produce and deliver our iron at that port, and has been sold (prior to the boom in the United States) as low as 39s. At Liverpool, American iron can be bought at 48s. per ton, which is 2s. 6d. to 3s. per ton less than the figure at which we can produce and deliver our iron at that port.

2. Bar iron. Belgian bars are quoted at £5 5s. 6d. per ton delivered Cardiff. We cannot produce and deliver bars at that port at less than £6 10s. per ton. Belgian bars are also delivered at works at £5 8s. per ton. Our cost and delivery to that town amount to £6 1s. 3d. per ton. At Grimsby, the price of Belgian bars is £5 3s. against our £6 4s. 6d. (cost of production and delivery rate). We recently heard of a sale in London of 15 tons of Belgian bars at £5 17s. 6d. per ton delivered there, which is 11s. 6d. per ton under our cost (plus railway rates).

3. Cast iron pipes. In 1903, we tendered to the ——— Corporation for 700 tons of large cast iron water pipes. Although we quoted a price which left us little or no profit, the French makers took the order at about 4s. per ton under our quotation. We also quoted for 1,150 tons of cast iron pipes for delivery into ———shire and in this case the French makers secured the order, their price being lower than the lowest English price. French pipes have also been purchased at ——— (Lincolnshire) at about 4s. per ton under our cost and railway rate, and at many other places. Their quotation for cast iron pipes for ——— Corporation was the lowest a short time ago, notwithstanding that our and several other large pipe makers' works are within 25 miles distance.

FIRM No. 801.

259

Iron plates and sheets of English make were mostly used until 1899, when the foreign firms offered wide steel sheets at equal or lower prices. These steel sheets were better rolled and sheared, and more uniform in quality than the iron sheets and plates.

FIRM No. 808.

260

Wire nails of all kinds are imported below our cost price from Germany, Belgium, America and France.

There are from 3,000 to 4,000 tons of nails, screws and rivets imported into this country every month, and a very large proportion of this is wire nails, principally from Germany, the imports of which amount to many times the quantity of wire nails which are manufactured in this country; the fact being that, owing to the carefully elaborated system adopted by German makers under the operation of their protective tariff, they export a large proportion of their output at much less than their home price, and make it impossible for manufacturers here to do any bulk of the trade, what is done being principally small orders and special sizes, &c., not worth their consideration.

From figures issued by the German Wire Nail Makers' Union, it appears that, during the second half of 1900, the Union sold 22,307 tons in Germany, and 19,525 tons for export. The profit on the sale in Germany was £58,956, while the export orders resulted in a loss of £42,522. The average price of wire nails sold in Germany was about £12 10s. per ton, whilst the orders for export realised on an average about £7 per ton. This shows a profit of over £4 per ton on the home sales, against a loss of over £2 on the export business. These figures (which were published in *The Ironmonger*, February 23rd, 1901) are the latest we can ascertain, but we may say that the conditions as to prices and volume of business, at any rate, as regards their imports to this country, have continued practically the same since that date.

We wish to draw attention especially to the extreme importance and value to us of our home market, which, however, is invaded to the enormous extent shown above, by means of a system which is carefully planned, and lasting, and not merely a temporary form of competition. We endeavour, as far as possible, to meet it by buying some of our wire from Germany, but, as their prices for wire is considerably higher in proportion to their price for nails, they do not allow us to seriously compete with them in this way. This also applies to the United States, who have actually quoted a trifle less for nails than for the wire from which they are made.

261 FIRM No. 834.

Generally, we should say that articles similar to those manufactured by us are sold by Germany about or below cost, but we have no reliable data on the subject, further than that the representative of a German house said he could sell us at a price lower than we could produce. Our feeling being strongly British, we would neither entertain his offer for them nor yet for wire.

Our trade as home is not subject to any such influence, but we know in the wire trade it is, as both German and American wire drawers quote rates which home producers cannot touch. American firms being lowest, or at all times when they produce more than is required in their own country. Some home makers in our way, offer at rates at which we cannot produce at a profit by using solely home drawn wire. Our remarks apply to the cheaper classes of wire ropes, such as are used for shipping purposes.

262 FIRM No. 836.

Our home trade in castings, forgings, railway tyres and axles, has been seriously affected by competitors principally from Germany and Belgium.

We do not experience active competition, at present, in plates and angles for home consumption, although we have had to meet this competition in the past both from Germany and America. We do, however, meet their competition in the Indian and Colonial markets.

The following are imported below our cost price:—

Ship castings from Germany.

Forgings from Germany and Denmark.

Tyres and axles from Germany and Belgium.

263 FIRM No. 844.

Belgian bar makers have sent enormous quantities of bar iron into local markets lately. At the moment the export trade in iron bars has been to a large extent killed.

It must be remembered that it is impossible to say that any particular article is produced below cost and to take special steps to prevent that one article coming in. As cost varies so much with output, what may seem to one manufacturer a price below cost, may be to another a paying figure, if it does more than provide material and wages and any surplus or additional output.

It is right to add that the Board of this Company is not unanimous on this point; one member holds strongly that no action is desirable.

Competition from Germany is increasing in this country, and also largely in India and South Africa. It may be difficult to show this in tonnage figures, but we have had of late years to gradually reduce our margin of profit for export to these countries, until at present we are selling without profit at all, merely to keep our mills employed, keep our men together, and reduce on-cost charges.

It is, perhaps, well to explain that until within the last five or six years, bar iron manufacturers confined themselves principally to bars made from puddled iron and scrap; steel bars even of small sizes being made almost entirely by steel manufacturers, who made their own billets. Owing to the cheap supply of foreign steel billets of recent years, and particularly during the last 12 months, bar iron manufacturers have turned their attention to rolling steel bars and at times have been able to supply these rolled from foreign steel billets at prices at which steel manufacturers making bars from their own billets could not compete. This has had the effect of throwing a number of puddlers on short time or out of work. At the same time, the loss of employment among puddlers and the diminished output of iron bars is not entirely due to the increased production of steel bars. Belgian iron bars have been imported in enormous quantities into this country during the last 12 months. Many local manufacturers are of opinion that matters will right themselves in time if left alone and that no action in the way of import duties or otherwise, is necessary.

264 FIRM No. 862.

The certainty of a large home trade at profitable prices enable (foreign) manufacturers to sell any surplus produce below cost, and this enables works to be kept in full operation, which keeps down dead charges and economises production all round.

Some time ago, sheet bars were delivered at Wolverhampton from the United States at £3 15s. per ton. The railway carriage and sea freight from place of origin would amount to about 20s. per ton, leaving only £2 15s., which is certainly less than the bars could be produced at.

265 FIRM No. 886.

America.—Pig iron, steel blooms, billets and tinplate bars, light steel rails, electrical conductor rails, &c.
Germany.—Steel billets, blooms and tinplate bars, steel sheets, plating bars, light steel rails, and electrical conductor rails.

Belgium.— Steel girders and joists, light steel rails, iron bars.

There is no doubt that such articles are sold here cheaper than in the country where produced, and that the makers are compensated by the better prices obtainable at home, owing to their tariffs, which protect their home trade.

The plants in Belgium, Germany and America are of modern equipment, and capable of producing more than their normal home consumption, therefore, with the object of keeping these works fully employed, they send their surplus here.

It has come under our notice that agents, representing Belgian and German houses, have asked for offers for lots they have to dispose of.

Our experience has been that such goods as we manufacture have not received sufficient protection to enable us to withstand the unfair competition of America, Germany, and Belgium, who have sold their goods at considerably less prices than we could afford to do, owing to their methods, in many cases, of exporting their surplus production, the protection of their home market ensuring them the maximum output, and consequently, the minimum cost of production.

FIRM No. 875.

My experience is that German and Belgian fencing standards are sold considerably below cost of production in this country.

FIRM No. 898.

Pig iron from U.S.A. is imported into this country below cost price here.

Our customers are buying at 5s. per ton less than we can produce at, and the Americans are reported to be selling for export to England at a price equivalent to 8s. per ton. lower than the price at which they are supplying their own country.

FIRM No. 899.

Strip iron is sometimes bought by the tube makers, both from Germany and America (i.e., U.S.A.), but the competition is chiefly that experienced by our customers, the tube makers, in the manufactured tubes. We, therefore, are greatly affected in consequence of the local tube makers being cut out by German and American firms.

FIRM No. 911.

We have known of German bars being sold at 83s. 6d. c.i.f. Welsh ports when the price for German home market was 100s. and the British coast about 90s. per ton.

Since 1900, America, Germany, and Belgium have made great inroads on the steel bar trade in South Wales, closing six steel works and preventing other works that had previously stopped work from re-starting when the demand should have justified a re-start. The quantity imported in South Wales is now probably equal to the output of this modern steel works designed for tin bar production. In 1903, about 250,000 tons were imported at Newport in addition to Swansea, Port Talbot, Briton Ferry, and Llanelly. All this material was formerly supplied by Welsh steel works for Welsh consumption, and what proportion has gone to the Midlands has displaced north country and Welsh steel or has resulted in the closing down of Staffordshire iron forges. America is beginning to compete with us in tinplates and galvanised sheets in the Canadian market.

FIRM No. 916.

We have recently heard that crank parts, tail, thrust, and intermediate shafts, &c., are coming in from Germany at about £11 to £12 10s., rough turned, being below cost of production here. We have no definite information before us, but we were recently informed by a firm in this country purchasing in these forgings from Germany, that these articles are sold here at or below cost of production in the country of origin, which appears to be explainable by the export bounty system prevailing in Germany.

FIRM No. 953.

American pig iron from the Southern and Western States is shipped to this country and competes with our iron whenever trade is bad there. Their surplus make is then dumped at under cost.

Large quantities of bar, strip, plate and sheet iron are shipped here from Germany and Belgium. This is made possible not only by cheaper labour and longer hours, but by bounties on iron shipped from Germany, paid by kartells or trusts, of as much as 15s. per ton. This finished iron would otherwise be made of our pig iron, and our market is limited accordingly.

FIRM No. 984.

Normal cost of production of individual articles can only be estimated by calculation. . . . Judged by these criteria alone, a large proportion of the iron and steel imported into this country is undoubtedly sold below the normal cost of production. This is particularly the case in regard to imports from Belgium and Germany. At the same time, if such imports are considered as surplus products of the producing country, the manufacture of which goes to cheapen the manufacture of other similar articles by keeping foreign works in full employment, another set of considerations comes into play, and in many such cases it is probably economical to sell a proportion of the output of the works below the normal cost of production, and thus profit is actually made by selling at a loss.

The articles mainly affected by these conditions, and with which we come into competition are:—

Bar iron and steel.	Tees.	Sheets.
Angle iron and steel.	Hoops.	Wire rods.

265 contd.

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273 FIRM No. 1,003.

Sheets, tank sheets, and thin plates are imported into this country at 10s. to 15s. per ton below our cost price from Belgium and Germany. Tube strips at about 10s. per ton below our cost price. Bars from Belgium about the same, viz., 10s. per ton below our cost price, and from Germany, and occasionally America, certain classes of wire nails about 20s. per ton below our cost price. These we have now ceased to make. We understand that the articles enumerated are imported at prices below the actual cost of production.

Iron and steel strips for tube making are being largely sent from Germany into Glasgow, which is their principal market at present.

274 FIRM No. 1,023.

We have every reason to believe that black and galvanised sheets of the thicker gauges are sold in this country under our cost prices, since in several instances we know of large parcels of such sheets being delivered to customers of ours whose works are within 100 yards of our own works, at prices which, if correctly reported to us, are below our cost prices.

275 FIRM No. 1,147.

We do not know of any articles imported *below* our cost price. Our cost price of wire is lower than in the United States, and about the same price as in Germany.

We were informed by an American mattress maker last summer, that American wire, which could be bought in Birmingham at £18 per ton, was sold for £21 in the States, and when freight, &c., is taken into consideration, this would be a drop of between 15 per cent. to 20 per cent.

Our price in Birmingham is £18 10s., but 90 per cent. of the wire used by mattress makers in Birmingham is American, and doubtless the same condition prevails in other towns.

This is the very lowest at which we have ever sold it, but each successive reduction in price has been met by a corresponding one by the Americans, and it has been obvious for the last two or three years that they would accept "any price" over here, in order to keep their plant running at utmost pressure.

276 FIRM No. 1,171.

Dumping occurs at times. United States competition is intermittent, but the competition of Belgium and Germany is constant.

277 FIRM No. 1,178.

America and Germany.—Pig iron and steel billets in place of pig iron.

These have been sold in Birmingham district, the pig iron at 3s. per ton less than our own.

The steel billets have been sold in the same district, and, to my certain knowledge, have been used to an advantage of from 5s. to 6s. per ton less than it would have paid the consumer to have bought pig iron.

278 FIRM No. 1,185.

We understand that a German syndicate of corset steel manufacturers sell their surplus products in England at cheaper prices than in Germany, enabling the English manufacturers of finished corsets to do a trade in cheap corsets.

279 FIRM No. 1,187.

Up to the present time, there has been no foreign competition in the home trade so far as the finished tinplates and black plates, which we make, are concerned. But the prices, which we obtain in the home trade, have been very seriously affected by foreign competition in steel bars, which are our raw material. These foreign bars have been imported into South Wales and sold at prices 10s. per ton below the lowest price at which Welsh bars have been obtainable, but they are absolutely unsuitable for such tinplates or black plates as we make . . . and we cannot use any of them. At the same time, they are suitable for making certain sizes and qualities of tinplates, which are made in large quantities by a few works, the price of which has come to be recognized as the basis or standard which governs the price of all other qualities. Consequently, the market price of our manufactures is based upon tinplates made from raw materials 10s. per ton cheaper than we can obtain ours for. We are not steel makers, but still the importations of foreign bars have been causing us very serious loss. For ten years or more foreign countries, such as Germany, France, Spain, Italy, Russia, as well as the United States, have been making tinplates and black plates in increasing quantities, and taking the place of goods formerly exported from this country. No doubt the chief advantage they have, which enables them to do this, is a high tariff, but probably the rates of wages and hours of labour help them. Previous to 1901, something like 60 per cent. of our own output was exported to the United States; now the plates made by us for that market are not more than 1 or 2 per cent. of our output.

280 FIRM No. 1,188.

Articles imported into this country below cost:—

From Germany.—Anchor heads.

From Belgium.—Engineers' castings.

From America.—Electrical engineers' castings; tramway plant also comes from America, but not at such ridiculously low prices as some of the other articles mentioned.

Competition experienced also in steel anchor heads, wheels and pinions, and practically all departments where immediate delivery is unimportant.

FIRM No. 1,216.

281

Stern frames, rudder frames, crank shafts, thrust, propeller, and intermediate shafting for marine engines, in steel. Also plate bending machine rolls in steel.

From Hamburg and Germany.—Steel shafting for marine engines, £3 per ton below cost. Rolls for plate bending machines, 30s. per ton below cost. (Below our cost price.)

We understand, and have reason to believe, that the steel manufacturers on the Continent have an association, and each member contributes so much in a pool, something like £5 for every ton of steel shafting they make for their own country, and for every ton they make for their own country below cost, the difference is paid to them out of the pool funds.

FIRM No. 1,263.

282

Columns and girders for structural work; and bolts, nuts and railway fastenings.
Belgium and Germany.—Steel rivetted girders and columns, and bolts and nuts.

We believe that such imported articles are placed from time to time in the British market at or below the normal cost of production in the country of origin, but it is very difficult to give the exact figures, as from time to time such sales are treated by the sellers as averaging with their home or other sales which they may have made.

FIRM No. 1,276.

283

The propeller shafting for mercantile marine steamers built in this country, which three or four years ago was all made in this country, is at the present moment practically all supplied from Germany and Denmark, except in those cases where it is specified to be British manufacture or of certain special quality, which is not easily obtained from Germany or in one or two cases where the engineers have forged of their own and prefer to make this shafting rather than purchase it. So far, the foreign shafting has almost all been steel, and when iron shafting is wanted, this is made in this country.

Several sugar machinery manufacturers are also using German steel shafts for the mill rollers, but the best firms in the trade do not do this.

A large number of marine engine and land engine forgings of all descriptions are also imported.

We manufacture engine and ship forgings, mostly for home market, but a small proportion for India, Hong Kong, Shanghai and Japan. Formerly, we used to supply a number of forgings to Germany, France, Denmark and Norway, but we have supplied practically none to these countries for three years.

Foreign competition is experienced in:—

Steel shafts for marine engines, and steel shafts for sugar mill machinery.

Articles imported into this country below cost price:—

Rough turned steel shafts for marine engines, rough turned steel connecting rods and other forgings for marine engines, rough turned steel shafts for sugar mill machinery.—From Germany and Denmark.

Above forgings are imported into this country at prices 20 to 30 per cent. below our cost price.

From inquiries that we have just made in Germany, we find that they are at present selling forgings in their home markets at about the same prices as they are selling in this country. This means that they are dropping the cost of transport to this country, but we do not think that they are able to produce the forgings at the prices that they are selling them at, in a great many instances. However, they are at present cutting prices in their own country in order to force all the firms to join the "new" steel and iron kartell, which they have been endeavouring to form for some months.

If this kartell were completed we expect that German home prices (for the inland market especially) would immediately rise to such a figure as would enable the forging manufacturers to "dump" their surplus production into this country and still make a handsome profit. In Denmark, we only know one forging manufacturer, Burgmeister Wain, Copenhagen. In this country, they, of course, require to sell at German prices.

FIRM No. 1,279.

284

Do not believe steel bars for tinplate making are imported under cost, and even if they are, it assists tinplate manufacturers as it prevents local works "ringing" up the prices. Cost of tinplates is thus kept down and consumption encouraged and increased.

FIRM No. 1,323.

285

Continental joists are now being largely imported owing to their great cheapness, being as a rule 10s. to 15s. per ton cheaper than English joists delivered at our works.

FIRM No. 1,338.

286

Forge pig iron.—The importation of foreign billets and sheet bars excludes pig iron from the forges which formerly made the billets and sheet bars direct from the pig iron. Besides, the effect of the foreign material is felt by smelters, who, from necessity, are obliged to make less forge iron, make a greater proportion of foundry iron, thereby causing keen competition in the foundry iron trade and lower prices for foundry iron.

Articles which are imported into this country below cost price—

Pig iron from America.

Pig iron is carried over from the United States as ballast in the cotton ships at a nominal rate.

FIRM No. 1,359.

287

Articles which are imported below cost—

Bars and hoops in iron and steel from United States, Germany, and Belgium.

As manufacturers we know it is practically impossible for United States, German and Belgian makers to produce the goods they are selling in this country at the prices they are accepting.

288 FIRM No. 1,375.

Germany commands our home (South Wales and Staffordshire) markets, and at the same time we are prevented from getting a reasonable home price, and even a sufficiency of work. Our former markets abroad, particularly our own Colonies, are invaded by the foreign producer.

During 1903, 250,000 tons of foreign (principally German) steel bars were landed at Newport. Such competition was unknown less than 10 years ago.

We cannot give details, but know that the raw materials cost as much, if not more, than our own, in German works; that the cost of the process cannot vary to a great extent; that labour is not greatly dissimilar; that the carriage and freight from Westphalia to Newport is about 10s., and that our best price (recently, cost or under) is always beaten by about 5s. per ton, that is to say, showing a distinct evidence of "dumping."

289 FIRM No. 1,379.

In reply to your inquiry respecting the price at which German steel music wire is sold in this country, we beg to say that certain qualities are offered on the London market as low as 8d. per lb. basis size, the lowest price at which similar wire is offered by English manufacturers is about 11d. per lb. The cost of producing this kind of wire depends very largely on the quality of the steel used, but, as far as we are able to judge, it would be impossible for us to make wire equal to that offered by German manufacturers at 8d. at a lesser cost than 10d. per lb.

290 FIRM No. 1,397.

As the result of the importation of large quantities of cheap foreign steel bars—not available, however, for our special requirements—tinplates and more specially bucket sheets made therefrom are sold so very much under the cost of manufacture of plates from British bars that they depress values generally and render our gradually decreasing trade in the home markets the most unremunerative of all.

291 FIRM No. 1,408.

Competition is experienced from Germany in the following articles:—

Steel shafts for marine engines, cast steel stern frames instead of forged iron, cast steel rudders instead of forged iron.

The German manufacturers put our manufactures into England considerably below our cost price. They evidently work upon a policy of maximum of output which reduces their ratio of working charges. Our policy is to destroy that maximum of output and thus to send the ratio of the working charges up. If the British market was closed to them their maximum of output must collapse.

292 FIRM No. 1,427.

All our manufactures, except guns, gun mountings and war material generally, are manufactured for the home trade, in regard to which we experience foreign competition.

Articles imported into this country below cost:—

Germany.—Steel shafting, castings and forgings and electrical machinery.

Belgium.—Electrical machinery, castings and forgings.

Question V., Form 1.—The chief instances which lead us to this conclusion are in connection with steel material.

(A) A firm of English steelmakers received a tender from Germany for shafting at £13 10s. for use abroad. On being told it was for use in Germany, the price was raised to £19 10s.

(B) A case arose in which the Germans had quoted for finished crank shafts £22 per ton. Upon an English maker offering to do them at £21, the Germans quoted for the pieces to form the shaft £10 5s. per ton, which is far below any price that could be quoted in England.

(C) In the case of a quotation for a rough machined shaft, weight 85 cwt., at £43 11s., it was estimated that, deducting the price of material, carriage and commission, a sum of £1 13s. remained to pay for forging, turning, fuel, &c. This figure is, of course, absurd.

293 FIRM No. 1,438.

We have only newspaper evidence as to the reasons why foreign manufacturers are able to compete with us in our home markets, but it is so unreliable, we cannot affirm that it is one or the other, or all combined. All that we know is that orders go to Germany or Belgium that ought to be executed at home, and if these countries could be kept out of our home, to say nothing of our Colonial markets, our trade would be good even now, and we should not be so subject to the violent fluctuations of the last few years. In 1900, the Americans invaded our market at a time when trade was good with us, and slaughtered prices and broke our market all to pieces, and after doing all the mischief they could, retired and began negotiations for cancelling the contracts they had made in this country. We had then a spell of quiet, and things began to improve, and prospects looked good, but in 1902, the Germans invaded and slaughtered our markets, and from this blow we are still suffering, and while a few may have benefited, the trade of the country must have suffered very acutely.

294 FIRM No. 1,442.

Germany.—Wire rods, for drawing into hawser wire, are being sold to our customers at 13s. 6d. per ton less than our cost price, notwithstanding that we have recently put down, at great expense, plant on the most modern principles for the production of these rods,

295 FIRM No. 1,446.

We do not suffer any direct foreign competition, our iron being of a higher quality than imported material, but our prices are indirectly affected by foreign material, for the reason that there is a certain standard of difference in price between our qualities and ordinary iron; and when foreign competition brings down the price of the latter our prices have to follow in order that the usual margin may be reserved.

FIRM No. 1,465.

296

Best Iron Wire:—

Bright, annealed, galvanised, and same made of basic steel and Siemens-Martin steel.

Germany.—All of before-mentioned.

United States.—Ditto.

Both in the United States and in Germany, wire is sold at higher prices than same is sold in England and Scotland, and as far as I could gather, from prices of material and wages, the price of the wire sold in this country was below the cost of making the wire in the United States and Germany.

FIRM No. 1,467.

297

Not at present. In past years on occasion iron has come from Canada and from Spain, but not below our cost price.

FIRM No. 1,508.

298

Submarine cable wire; fencing wire of all descriptions, including barb wire; wire for mattresses; wire for sofa springs; nail and rivet wire; pin and hairpin wire; in fact, all classes of wire manufactured from a low carbon steel.

We should say that a large portion of the articles mentioned above are sold at, or below, our cost of production, even when we base our calculations on foreign billets as forming our raw material. Were we to base on English material, these enumerated articles would be sold, generally speaking, below our cost of production.

Undoubtedly the imported articles previously referred to are exported here, and to our Colonies, which is by far the biggest market for goods of the quality we refer to, below the normal cost of production in the country of origin. A glance at the trade journals of Germany and America show that the home trade prices are considerably higher, averaging roughly £2 per ton over the price at which they will deliver to the nearest port for the export trade, and those firms who do not control their own raw material—by which we mean in this instance pig iron and coal—and who buy steel billets at prices quoted in the trade journals, must sell very considerably below cost to do any export trade. The bulk of this export trade is, however, done by syndicates and trusts, and it is difficult to obtain results of their export trade, as distinguished from their home trade, their plan being to go in for a large quantity, and average up the results.

FIRM No. 1,510.

299

So far there is no foreign competition in the home market, but it is to be noted that at least two-thirds of the make of tinplates of this country are exported abroad.

There are no foreign imports into Great Britain.

FIRM No. 1,512.

300

The following are the prices of German and American bars (A) for export to this country and (B) for their home trade.

	Export per ton.	Home market per ton.
German bars.	77s. d/d works in Wales.	92s. 6d. f.o.t. makers' works.
American bars.	76s. d/d works in Wales.	28 dollars or £5 16s. 8d. f.o.t. makers' works Pittsburg.
Price of Welsh bars, 80s. to 85s. delivered.		
Tariff on steel bars into Germany, 23s. 5d. per ton.		
Tariff on steel bars into U.S.A., 46s. 8d. per ton.		

We have no doubt that these foreign sales are occasionally made in England below the normal cost and the agents are apparently instructed to sell at the best prices they can obtain in England. In other cases, it may be that the additional output for their works caused by their foreign sales enables them to reduce their export price for all the additional quantity, the establishment charges having been borne by the lesser product for their home market. A huge output is of first importance in reducing cost and this is never lost sight of by American and German manufacturers.

FIRM No. 1,514.

301

We do not know that iron of our quality (pig iron) is imported at under our cost, but we are suffering from the importation of steel billets and bars into Wales, our best market, which keeps our prices very low.

FIRM No. 1,516.

302

Billets.—U.S.A., Germany, Belgium, Sweden.

Rods.—U.S.A., Germany, Belgium, Sweden.

Wire.—U.S.A., Germany, France, Belgium.

The soft steel, which we occasionally buy from large English makers; these English makers are regularly under quoted by 5s. per ton, by both American and Continental makers. All quotations being delivered at our works. In harder qualities, the prices quoted for billets and rods by American and Continental makers is below our cost of production, which we believe is as favourable as any other makers in this country.

Note.—Wire ropes are affected by above.

We have no accurate information as to the works cost of production in foreign countries, but from personal knowledge gained in Germany and United States, the selling prices in those countries of billets, rods, and wire is higher for given qualities of material, than is quoted to us delivered in England.

303 FIRM NO. 1,517.

Iron Forgings.—Principally marine shafting.

Steel Forgings.—Marine and engine shafting, &c.

Steel Castings.—Stern frames, rudders, propellers, brackets, locomotive castings, &c.

Articles imported below cost.

Germany.—Most of the articles named above. Statements have been made by Germans and others, that they are often sold below cost price in this country, and below the prices sold to Germany, but it is most difficult to get official data.

There is no doubt that longer hours and lower wages exist in countries that compete in our trade, which is a great advantage in "Natural Competition," but in some items of our manufacture we find, if we take off every penny of labour from our costs, they still remain above the prices that the Germans are delivering in the North-east coast. Moreover, it must not be lost sight of, that in addition to the lower wages and longer hours in competing countries, the enhancement of costs by Board of Trade and other enactments, play a considerable part in favour of the foreigner in natural competition.

304 FIRM NO. 1,552.

Our make of steel tin bars for rolling into tinplates for export, stopped through the importation of tin bars from United States and Germany at less than cost of manufacture in their countries, or at these works. The above remark also applies to steel blooms and billets.

The following articles, which are similar to those manufactured by us, are imported into this country below our cost price :—

Hematite pig iron from Spain.

Steel billets and tin bars from United States.

Steel billets, tin bars, angles and channels from Germany.

Steel angles, channels and light rails from Belgium.

Steel billets and steel tin bars from United States and Germany : we cannot state definitely that these articles are placed upon the British market at or below the normal cost of production in the above countries, but it is generally supposed that this is the case, and we quite agree with this opinion.

305 FIRM NO. 1,566.

Steel Plates.—At times, both pig iron and steel have been imported at below our cost price :—

Steel Plates from Germany.

Pig iron from United States of America.

We understand that, in the case of steel plates, it is the case that both in America and Germany the price at home, aided by the duties, was maintained at a higher rate than that at which they were sold for export.

As there has been little of this sort of competition for some time past, we cannot give particulars.

306 FIRM NO. 1,577.

To the best of our knowledge, pig iron of similar quality to ours has not been imported into this country below our cost price at the time of importation. But the Canadian pig iron, arriving on the West coast and the Clyde in January of this year, must have approximated closely to our cost at the time it was purchased in Canada.

Canadian pig iron has probably, on several occasions, been sent to the Clyde and the West coast ports at or below its cost of production, the trade being made possible by the bounties paid to the makers by the Canadian Government.

We should say this applies to the bulk of the Canadian pig iron which has been imported into the United Kingdom.

307 FIRM NO. 1,588.

In angles, bars, tees, strips, and hoops in iron and steel. Rivet bars, &c. Horse shoeing bars, &c.

Belgium, &c.—Rivet iron.

Germany, &c.—Tube strip.

The only evidence would be to compare their home and export rates; we cannot give figures beyond the fact that their home markets are protected and ours are not, the obvious result being that their home and export rates are brought out at a profitable average to them.

(D) FOREIGN COMPETITION IN NEUTRAL AND PROTECTED MARKETS.

308 Question 11 (Form IV.):—*Have the Iron and Steel Trades of Germany, the United States and Belgium, and other foreign countries made any inroads on any markets, hitherto largely supplied from the United Kingdom, in any branch of business in which you are engaged? Give such particulars as you can.*

**Foreign
Competition in
Neutral and
Protected Markets.**

Question 7 (Form I.):—*Has your export trade suffered in recent years by the operations of the tariff of any country? If so, please state your experience?*

Question 9 (Form I.):—*What is your experience in respect of foreign competition in the Colonies in your trade?*

309 FIRM NO. 185.

We find we are undersold in South Africa by the low-priced Belgian, German and American fencing materials.

FIRM No. 275.

Formerly our trade was both home and foreign, now it is almost all for the home market. The Colonial trade has also gone this last few years.

FIRM No. 312.

Our experience in the Colonial trade is exactly similar to our home trade, viz., that the United States and Germany will sell a proportion of their make at an absolute loss to the Colonies, and we can only compete when material of British manufacture is specially required.

FIRM No. 348.

We are manufacturers of crucible cast steel for tools, &c., and also wire drawers. Our tool-steel trade is done mostly on the Continent, Germany being the best market. Our wire trade is equally divided between Home and Continental. We can do no Colonial trade, as our goods are semi-manufactured and not in demand in the Colonies.

Many lines we used to supply to these countries they manufacture themselves now. Except their home trade, we do not think that they have taken much trade from us in neutral markets.

We cannot export at all to the United States now, although we used to do. Our French trade, which was up to 30 years ago the largest part of our foreign trade, is now, on account of their tariff and custom classification, all but stopped. In other markets we just hold our own, but we are afraid any rise in their tariffs would stop our trade there also. Our foreign competitors make the same goods as we do, and only by superior quality and workmanship can we hold our own.

FIRM No. 478.

Messrs. A.B.C., of Sheffield, used to buy large quantities of steel from us for export to — (Colony). They now buy in the States and ship direct to — (Colony). They never see it: only invoice it and pocket the profit. How is tariff reform going to deal with this?

FIRM No. 549.

Sweden is sending mining drill steel into South Africa very cheaply. U.S.A. are delivering files into South Africa and Australia cheaper than we can possibly do: the files are lighter in weight and of poorer material than Sheffield files; they do not wear so long as Sheffield files, but they are cheaper.

FIRM No. 619.

We are entirely excluded from United States markets and from Canada. In Australia we have to pay a tariff of 20 per cent. *ad valorem* on chilled iron wheels, but the native industry of that kind is not yet sufficiently developed to exclude us from the Australian market.

We have never been able to sell a single wheel or a single roller in the United States of America on account of their highly protective tariffs. In Germany we are unable to compete with German manufacturers when goods are for consumption or use in Germany. But when our rollers, for instance, can be marked "in transit," and attached to paper-making machinery for exportation out of Germany, we appear to be able to compete with German makers of chilled rollers. The same applies to France in a minor degree. We are able to trade with France in rollers, as there are no good makers of good chilled rollers in that country—at any rate, up to the present, they have not produced an article equal to what we make in quality. We are enabled to trade in rollers in France on account of a preference given us of nearly 30 per cent. on the tariff under the most-favoured-nation clause. There are makers of chilled wheels in France, and their import tax handicaps us severely.

FIRM No. 646.

The Belgian iron slit rods are being sold in the China market at prices we cannot touch, and purely on account of price, we are losing a good trade in this market. This trade is also hampered by the freight from our port being considerably higher than it is from Antwerp to the China ports.

Foreign competition experienced in respect to the following:—

Patent wrought nails.

Steel dog nails.

Merchant iron.

Slit iron rods.

Steel hoops, &c.

Some years ago we made wire nails, but had to give up this manufacture entirely owing to foreign competition, and the same now applies to common rolled iron.

Articles imported into this country below our cost price:—

Wire nails from Germany, Belgium and America.

Rolled iron and slit iron rods from Belgium.

Wrought iron nails from France and Sweden.

Dog nails from Germany.

In each case these imported articles are sold in the British market at a price which is less than that obtained for them in the country of origin by about the amount of the protective tariff for that country. For instance, wire nails made in Belgium and Germany are £6 per ton dearer in those countries than in England, and other manufactures in proportion.

Our export trade has been steadily declining. We did a large trade in India and China, but have lost a large proportion of the former, and nearly all the latter through competition, Belgian and French manufactures being sold in the above markets below cost price, and we are further handicapped by having to pay higher freights to those markets from our own ports than our competitors do from Antwerp, &c.

The competition of wire nails made abroad is steadily reducing our sales to the Colonies, as we cannot compete with the price their surplus manufacture is being sold to the Colonies at. This also applies to patent wrought nails in India.

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317 FIRM No. 692.

We cannot say that our trade has suffered by the operation of the tariff of any particular country, except in so far as the tariff naturally increases the cost of our goods to consumers in those countries, and to this extent operates against the more extensive use of our manufactures. Where we have to meet foreign competition on neutral ground, the same tariff will operate equally against our competitors, but for the reasons mentioned above (lower rates of wages, longer hours, bounty) our competitors have a distinct advantage over us.

We formerly had a considerable trade in corrugated furnaces on the Continent of Europe, but, owing to the dumping tactics of German manufacturers that trade is now almost *nil*, they having the assistance of the export bounty, as well as a great advantage in the matter of wages. Contracts have also been secured by competitors in Hungary and America for pressed steel rolling stock in competition with us, full particulars of which are given below.

In the case of the 800 wagons quoted for to an Indian railway, the price at which the order was taken was 33 per cent. below the lowest English tender.

In the instances given below, we have lost contracts in India, Egypt and South Africa, by reason of the competition of foreign makers, who offer a class of workmanship and material far inferior to our own, they being allowed to practically supply work to their own specification, while we are strictly held to a rigid specification by the engineers in the country, in fact, it is a common practice amongst engineers to accept from foreign manufacturers articles which would be peremptorily rejected if placed before them by any English manufacturer.

Egyptian railways—Ballast, coal, box and charcoal wagons, for which we quoted £138,250; the Ungarisch Wagen und Maschinen fabrik Actiengesellschaft quoted £109,050, and although the lowest English tender was recommended, the contract was placed with the Hungarian Company.

Rand Mines—We quoted for 150 Hopper Wagons to rigid specification, and the order went to the Pressed Steel Car Company in America, to their own specification, at a price much below ours.

We also quoted to the Cape Government Railways for 38 bogie wagons for the Port Elizabeth Avontour Railway, 2 feet gauge, at about £12,000, the contract for which was placed with the Hungarian Company under £9,000. Some of the wagons had their underframes damaged by loads much less than the maximum specified when in traffic.

Foreign competition experienced in respect to:—

Corrugated flues for land and marine boilers.

Mild steel boiler plates.

Pressed steel underframes and bogies for railway rolling stock, and complete steel wagons.

The following are imported into this country below our cost price:—

Corrugated furnaces from Germany.

Steel boiler plates from Germany and Belgium.

Complete pressed steel wagons for railway rolling stock from United States.

Corrugated flues for which a fair price is obtained in Germany are offered for sale in this country at prices which no English manufacturer can possibly compete with, the only circumstance in favour of our manufacture being the reluctance of English users to take the quality of steel offered and the difficulty of passing the various official surveys, which has militated against the use of these articles in this country, but on the question of price we are seriously undersold.

The supply of steel plates in Germany and Belgium, we believe, is controlled by a trust, who obtain good prices within their own countries, and make a practice of selling their surplus output at or below cost price in this country, being assisted in this by the export bounties.

We attach a quotation received from the German Sheet Steel Association in proof of this. Sheets to the same specification could only be obtained from British makers at about £7 12s. 6d. per ton. But for the special clause on the terms of sale *re* re-importation into Germany, it would be possible to re-export sheets from this country to Germany at a profit.

318 FIRM No. 693.

Our export trade with all Europe (Germany, Russia, Scandinavia especially) is practically ruined by the operation of hostile tariffs.

319 FIRM No. 768.

In the middle of last century, England unquestionably commanded the wire trade of the world. It was not until about 1880 that competition from Germany began to be felt, while it was another 10 years before the United States of America seriously attacked the foreign trade. The result has been that Germany and the United States have made enormous inroads into the foreign markets which used to be supplied by this country. In those markets they are always prepared to accept substantially lower prices than anything that the British manufacturer can afford in the common classes of wire. In the finer qualities, we are still able to hold our own, but in such lines as fencing wire, barb wire, &c., which are exported in thousands of tons, the loss of trade to this country by competition from Germany and the United States is very serious. We append such figures as we have by us of the exports of wire and wire manufactures from the United States, Germany and Great Britain during the last few years:—

United States.—										
1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
20,133	21,444	29,223	35,250	52,531	71,406	181,335	132,595	132,595	133,840	161,229 tons
Germany.—										
	1899.			1900.		1901.	1902.	1903.		
	206,335			216,745		302,325	221,184	228,411 tons.		
(nine months only)										
Great Britain.—										
1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	
37,040	34,675	42,220	56,110	51,472	44,123	48,498	38,441	47,349	55,046 tons.	

320 FIRM No. 785.

We understand that something like 80 per cent. of the iron trade of India is done with foreign countries, principally Belgium. Formerly, that market was almost entirely in British hands.

FIRM No. 808.

We have no export trade with foreign countries who impose protective duties and who manufacture for themselves.

In recent years we have been shut out from the Russian market (where we did a large trade in tacks, &c.), owing to the imposition of a heavy tariff designed to foster the manufacture of these goods in their own country, and which has completely had the desired effect.

We have a considerable export trade with the Colonies, especially India and Australasia, but not Canada. This consists mostly of the lighter goods, principally tacks.

The export generally in the heavier goods, i.e., nails, &c., is almost monopolised by the German and Belgian wire nails. Australia, however, has wire nail factories which are protected by their tariff.

321

FIRM No. 834.

(1) America, where a large business was done by makers in this country, but, when the tariffs were raised, their business was practically wiped out.

(2) Russia.—Three to four years ago, three or four wire rope works were started [in Odessa, Baku and Batoum, duty was fully doubled and is now, we believe, £36 10s. per ton. So business there was entirely stopped and has been since. Prior to then, it was a good market for British firms.

South Africa.—An American firm selling at cost to get an opening.

Australia.—Germany selling at prices we cannot supply at a profit.

Canada.—America, being closer to the market, selling at lower rates than they charge in their own country.

To Africa, the American has much lower shipping rates, and to Australia the same remarks apply from Germany.

322

FIRM No. 842.

We suffer most from American competition, freights, as a rule, running much less between America and our main Colonial centres, New York to Cape Town, to Auckland, &c., being much lower than from Glasgow or London to the same Colonial ports.

America sends large quantities of porcelain enamelled cast iron baths, &c., to Australia, New Zealand, Africa and the Continent. These markets were previously held by British manufacturers almost entirely.

Belgium sends cast iron columns, constructional ironwork, &c., to South Africa, to the hurt of the British manufacturers.

Sweden, France, and America, send cooking stoves in large quantities to our Colonial markets, which were formerly almost wholly supplied by British manufacturers.

323

FIRM No. 852.

As France, Germany, Russia, and all other Continental countries raised their tariffs, I received information from my correspondents that if I intended to retain my trade, I must make corresponding reductions. This I have been obliged to do. In America, the tariffs have risen to such a height, that they shut out English steel, and have forced many crucible steel makers, who had American trade, to move their works there. The same may be said of Russia in a less degree. We still sell there, as the crucible steel of the highest quality may be said to be a special product, but the cheaper varieties are very much affected by adverse tariffs.

The United States Crucible Steel Trust made a raid on this market two years ago, but failed, principally owing to lack of quality.

Quality is of such importance in this special trade, that it is almost impossible to state what is above or below cost in a competitor's products.

324

FIRM No. 886.

Foreign materials have latterly made considerable inroads on markets formerly more largely supplied from the United Kingdom. We have of late years experienced a loss of a great deal of our export business in bar iron, steel girders, channels, angles, tees, &c., notably in China, Japan and Egypt, which business has been secured by our foreign rivals. For example, our sales to China and Japan have gradually diminished as under:—

1903.	1902.	1901.	1900.	1899.
£8,348.	£15,600.	£20,329.	£24,260.	£25,714.

325

FIRM No. 911.

Our export trade to the United States of tinplate used to be very large. Since 1891, it has dwindled and now is non-existent. All European countries hamper our export in tinplates, galvanised sheets, terneplates and black-plates, by heavy tariffs. We are threatened by a fourfold increase in the Roumanian tariff, which country is a good market for our produce.

Galvanised sheets.—American competition is greatly felt in the Canadian market, especially when the demand in the United States is slack. We frequently lose orders in this market that are taken by the American companies at Pittsburg.

326

FIRM No. 943.

Our export trade to Hamburg and North Sea ports has suffered by reason of German tariff, and to Denmark by reason of German cutting of prices.

327

FIRM No. 957.

We exported umbrella frames to the United States in 1874, to the amount of £10,748; in 1875 to the amount of £5,297; in 1903, £1,365. We exported steel rails to the United States in 1872 to the amount of £91,315, and to July, 1873, £46,551; since which time we have sent no rails.

328

329 FIRM No. 984.

Our experience is that foreign competition is steadily increasing in all the Colonies, mainly because the protective tariffs of foreign countries enable them to dump into neutral markets. Our most persistent competitor in all our markets is Germany, where large bonuses on all export trade are regularly paid by the kartels and combinations. . . . American competition is also at times exceedingly severe, and is carried on regardless of cost, simply depending on the policy which at the time commends itself to the rulers of the Steel Trust and other such combinations.

In reply to Question No. 7, we would state that there is a very important indirect result from the protection enjoyed by our competitors in their own countries. As a consequence of a well-secured home trade, they are able to compete in export markets at one time almost exclusively supplied by Great Britain, at prices which manufacturers in this country, who have no similar advantages, are unable to touch. This has very seriously interfered with our once most important Indian trade, and also with our trade in Argentine, Egypt and the Mediterranean ports generally, in all of which British iron at one time predominated, but which are now practically lost to us.

Most serious inroads have been made in almost all of our foreign markets by the introduction of German, Belgian and American iron and steel. In some of our oldest, and at one time most important markets, our iron and steel has been almost, if not entirely supplanted. This is the case with all the Mediterranean and Black Sea ports . . . and our once flourishing trade with Egypt has all but disappeared, and the Levantine, Turkish and Danubian trades are entirely gone from us. We have also lost, within the last five years, a very large trade with Portugal and Spain, which has gone to German and Belgian makers. In South America, Brazil, and the Argentine Republic, over the same period, a trade, representing to us from £100,000 to £120,000 a year, has dwindled to less than a fifth of what it was, and here the United States and Germany have been our principal competitors. Perhaps our most unsatisfactory experience has been in India where ten years ago foreign competition was practically unknown, but where what used to be our principal exports of iron and steel, have largely gone into Belgian and German hands.

330 FIRM No. 1,003.

We used formerly to send large quantities of iron and steel sheets to India, Japan and Russia. We do not even get inquiries now for these markets.

331 FIRM No. 1,023.

We find the Germans, Belgians and Americans are seriously affecting our trade by competing in the articles we export to Australia, Canada, South Africa, &c., and that they are adopting the process of dumping their materials into the Colonies as well as this country.

The whole of our trade in marine forgings, tyres and axles, locomotive material and every description we conducted with Germany, Belgium, Holland, Italy and France has entirely disappeared, due to the imposition of a tariff wall in these countries.

Their import duty protects them sufficiently to compensate them for a slight loss upon their British trade, in order to derive the advantage of keeping their foundries and steel works fully employed.

332 FIRM No. 1,147.

American wire is sold to mattress makers in Sydney at 30s. per ton less than it is sold in Birmingham, and it appears useless for us to attempt to do business there.

333 FIRM No. 1,171.

Cast Shoe Nails.—Years ago we did a very large trade with U.S.A. Their tariff was then 25 per cent; afterwards it was raised to 35 per cent., and we still did a considerable trade amounting to £600 to £1,000 a year. Then the McKinley tariff came along, and the duty was practically doubled. This effectually shut us out, and we have not sent a single nail there since.

The foreigners, in addition to severe competition in our home trade, have practically secured the whole of the Australian and Indian trade in boot and shoe nails made from wire. Large quantities are being constantly shipped by London merchants direct from Antwerp, Rotterdam, &c., to India, Australia, &c., at prices which we cannot touch. The goods are, we know, bought from London merchants by the Colonials in all good faith as English, but the goods never touch England.

334 FIRM No. 1,174.

We think our trade in Germany has suffered through their tariff of 10s. per ton, but possibly it has also been affected by their own improved methods. Our trade, however, has probably been affected more by the importation of German manufactured steel, which has undoubtedly lessened the home demand for our iron, which is used by the steel manufacturers here.

335 FIRM No. 1,187.

The United States are frequently reported to be taking away some of our trade with Canada. This competition will undoubtedly become serious, but up to the present it is not so.

336 FIRM No. 1,188.

The Germans and Americans are both taking a good deal of the South African trade that hitherto came indirectly to us.

FIRM No. 1,263.

337

Our export trade has suffered more particularly in our Merchant Department, through the operation of the tariffs of other countries, more particularly in the United States of America, in which our export trade in iron and steel has dwindled to practically nothing.

We have experienced severe competition, especially in India and in South Africa, with Belgian, German and American competition in all the articles that we manufacture, and in nearly all that we deal with as merchants.

FIRM No. 1,266.

338

Our own experience is that we suffer mostly from the competition of America and Germany, principally the former. To get into Colonial markets, and particularly when their own trade is slack, they seem prepared to sell at almost any price irrespective of cost.

FIRM No. 1,276.

339

Our export trade to the Continent of Europe has entirely stopped during the last three years, but we cannot say to what extent this has been caused by foreign tariffs.

FIRM No. 1,279.

340

We have suffered from the operation of tariffs; American duties have seriously reduced the exports to that country; our trade has suffered also from French duties, and we are anxious to get a reduction of these duties.

FIRM No. 1,359.

341

During the last five or six years we have practically lost the following markets, in most cases orders having entirely ceased:—

Christiania.	Lisbon.	Lyttleton.
Odessa.	Melbourne.	Galatz.
Oporto.	Singapore.	Bourgas.
Colombo.	Botoum.	Rangoon.
Madeira.	Wellington.	Hong Kong.
Varna.	Demerara.	Tripoli.
Bombay.	New Harbour.	Otago.
Calcutta.	Aux Coyes.	Penang.
Jamaica.	Dunedin.	Cochin.
	South Africa.	

In consequence of this our two-hoop mills, which formerly worked two shifts, viz., night and day, now work a single shift on days only, thus throwing two sets of men out of employment.

FIRM No. 1,379.

342

As regards the decline of our trade with the United States, the primary cause was without doubt the imposition of a heavy import duty, but we do not think the removal of this would insure a return of the business.

Encouraged by such a protective tariff, several American manufacturers took up the trade, and having laid down plant for the production of this wire, would doubtless make considerable sacrifices rather than lose it.

FIRM No. 1,427.

343

Our tenders for steel castings, forgings, &c., for the United States are placed out of competition by a 45 per cent. tariff. We have often received inquiries.

FIRM No. 1,438.

344

We have done no export trade for some years. Twenty years ago we were doing a large trade with America in converting steel, but the huge tariff charged on our manufactures, aided by the introduction of Bessemer steel, drove us completely out of the market. It is, however, doubtful, notwithstanding the high duties, whether we should have lost the trade but for the introduction of the Bessemer steel.

FIRM No. 1,446.

345

Our export trade has suffered very considerably in the past, but not much in recent years. We think, though, that the employment of steel, instead of best iron, and the endeavours of consumers to make a lower quality serve their purpose, have had more effect on us than tariffs. We make quite a special iron.

FIRM No. 1,467.

346

While unable to give precise details, owing to lapse of time, we may say we did a large business in iron with Germany, Austria, and Russia, some twenty years ago. Russia raised her duties by successive sums, until our trade was stopped entirely. This was for iron for steel making by the "Bessemer" process. Germany returned the 10s. duty to the manufacturers, when the said manufacturers re-exported the finished articles (rails, or steel goods from basic iron), but, as German commerce grew, and their home industries developed, they put official obstacles in the way; first, a bonded store for receipt and issue; next, either later or at the time, Government officials in charge of it; and, finally, they demanded proof of origin of raw material, and identity proof with the finished article, so that by and bye the trade was entirely killed.

In the United States we could now compete along the seaboard and coast towns if the four dollar duty were removed, as during the recent industrial activity there, we exported a very large quantity of special pig iron for high-class purposes.

347 FIRM No. 1,508.

Our export trade has suffered by the operation of tariffs, both directly and indirectly. By direct means, the markets of Germany and the United States are practically closed. Indirectly, our competition having ceased in their home trade, has enabled the Germans and Americans to obtain a better price at home, and so afford to sell at lower prices than ourselves in the usual markets of Canada, Australasia,* and other British Colonies, and South America. At one time, practically this trade was an English one entirely. Then came the German competition, and now the American.

* These are the largest markets for fencing wire.

348 FIRM Nos. 1,510 & 1,511.

Our experience is that we are fast losing the Canadian market for tinplates and the Americans have recently sold at least 100,000 boxes there, while it is reported that they have also taken orders for Australia.

The *Iron Age* of February 4th, 1904, page 48, gives the price of 20 by 14 tinplates at 3'64 dollars, f.o.b. Chicago or 15s. 9d. a box. The present price of English tinplates is about 10s. 9d. net f.o.b. Swansea. Notwithstanding this difference in favour of our tinplates, the Americans have booked Canadian orders at a price delivered Canada less than f.o.b. Swansea price of English plates.

The tariffs put on tinplates by the United States have completely killed our trade with that country, except as regards a small export of tinplates for re-exportation on which a rebate of 99 per cent. of the tariff is allowed.

The following figures, giving the annual exports of tinplates to the States from this country before and after the tariff, will show the effect it has had:—

Before the tariff—			Tons.
1886	..	..	263,58
1887	..	..	268,355
1888	..	..	292,626
1889	..	..	336,689
1890	..	..	321,109
After the tariff—			
1898	..	..	65,338
1899	..	..	63,546
1900	..	..	58,043
1901	..	..	75,822
1902	..	..	65,148

The high tariffs put on by Germany, Spain, Italy, and France, enables these countries to erect tinplate works and there are at present at least:—

Six works in Germany.
Six in France.
Three in Italy.
Two in Spain.

In addition there are tinplate works in Austria, and at least one tinplate works is being erected in Russia, whilst others are contemplated.

Our trade is subject to adverse competition in Canada owing to the United States being protected by a duty of 7s. per box, equal to about 70 per cent. of the value, enabling them to sell their surplus make in Canada.

349 FIRM No. 1,516.

German and American wire rope makers also sell finished wire rope in British Colonies at lower prices than they would charge for same rope in the country of origin.

Wire rope is our original and principal trade, and the manufacture of steel, wire rods, and wire in our works are principally, though not entirely, undertaken to supply the material for wire rope making.

We find severe competition in all the British Colonies from (A) Foreign wire rope makers. (B) English firms who, at the prices at which they sell, must make their ropes, either from (1) foreign wire, or (2) wire made from foreign rods or billets.

In U.S.A. we did a good trade in wire rope some years ago. This branch of our export trade is now absolutely *nil*.

In Russia, Germany, Switzerland, Belgium, and Austro-Hungary, our trade is rapidly declining, and becomes more difficult to negotiate, on account of tariffs, which precludes our doing business with any margin of profit.

350 FIRM No. 1,517.

Our experience covers almost the whole ground since the introduction of free imports. Being one of the oldest manufacturers in the trade, we supplied the first railway material, and as railways were constructed in each country, both in Europe and elsewhere, we had a fair chance of the orders for our material; but since tariffs have been raised in each country by them to secure their own manufacture, one by one has ceased to take our products. Following this of more recent date, the neutral markets—South America and our own Colonies—have been either lost or difficult to hold in consequence of foreign competition, German especially, due to the advantage their home market (at a profit) gives them over us, which also enables them, in many cases, to take from us work in our own district of the North-east coast of England.

Our experience of foreign competition in the Colonies is that of other neutral markets. We have the greatest difficulty to hold our ground; in fact, cannot do so, when competition is quite open, as surplus material is here again the cause.

351 FIRM No. 1,531.

We have this morning received an order for a quantity of steel plates for New Zealand, and in this case the German manufacturers were considerably below us in price, but owing to the preferential tariff of 20 per cent. now in force, we were enabled to secure the business.

FIRM No. 1,534.

352

Our exports to the United States have entirely disappeared, and those with Canada also disappeared for a number of years, till last year we were able to cut out German manufacturers, who had, for several years previously, been supplying the Canadian consumers.

Taking the Bombay market, where we used to ship large quantities of cheap common iron, we now send none; the Belgians now supply the whole of this market. We may here state that that has been largely brought about by the cheaper freights from Antwerp than from the Clyde, British shipping companies also carrying cheaper from Antwerp to Bombay than from Berlin Ports to Bombay.

Australian markets have been invaded by American manufacturers, aided also by cheaper freights; consequently, smaller quantities of bar iron are shipped from this country now.

FIRM No. 1,541.

353

To the best of our knowledge, we experience very little foreign competition in the Colonies.

FIRM No. 1,552.

354

We export very few rails to the United States on account of the prohibitive tariff. Many years ago they placed the first tariff of, we believe, £3 8s. per ton on British manufactured rails, which practically debarred this country from sending them further supplies. The modification in the tariff since has not been sufficient to give us a chance of exporting rails to the States.

FIRM No. 1,566.

355

In the case of steel plates, we find German competition aggressive and successful. We also find American competition aggressive in the Australasian market.

FIRM No. 1,567.

356

The Indian market has been largely captured by reason of foreign importations. South Africa and Australia, as well as Canada, have been partly lost by the importation of German and United States produce similar to our own.

FIRM No. 1,588.

357

The United States, Belgium and Germany, &c., are competing with this country all over the world (1) by having a secure home market and (2) by underselling abroad, obtaining an average that provides full work, reduced running expenses and pays full wages.

FIRM No. 2,338.

358

Export trade has suffered in bridgework, wheels and axles and sections, in Germany, France, Russia, America, and all continental nations.

FIRM No. 3,870.

359

Our export trade has suffered—

In Australia when the duty was increased to protect home industries.

In Canada, the market has been closed against us owing to the raising of duty to protect their own manufactures.

(E) SUGGESTED REDUCTION OF FOREIGN TARIFFS.

Question 8 (Form I.):—*What amount of reduction of the tariff of any country would enable you to compete successfully within that country with commodities made therein similar to those you manufacture?*

360

FIRM No. 275.

361

Until our goods can go into every country free, as their goods come here, it will not be possible to compete against any odds, however small. We have allowed the wire manufacturers of Germany and America to take such advantages of a profitable home trade that we question whether, with a universal free entry now, we could hold our own, until we have placed our means of production on a level with theirs. In the wire trade, a profitable home trade has enabled the foreign manufacturers to build enormous works and plants that are far greater than any here; we do not see at present any improvement in machinery on that employed by ourselves.

FIRM No. 768.

362

In view of the present strength of the German and American wire industry, it is doubtful whether any reduction in their tariffs would enable us to compete successfully in those countries. The result of such reduction, however, would operate most beneficially in reducing the profits at present made by the manufacturers in those countries, upon which alone is founded their successful inroads into the British and other markets of the world. This is fully appreciated by both Germany and America, and it is the practice of both to keep prices down in England by offering wire in England at prices systematically below English current rates, in order to deprive the English manufacturers of the advantage of good prices at home, which they themselves enjoy, and further, for the purposes of their Customs, the Americans insist upon a declaration by importers into their country that the prices of the import are not lower than those prevailing in the country of origin.

363 FIRM NO. 1,279.

If existing duties to foreign countries were removed, no one would be able to make tinplates outside Great Britain as they have not the facilities.

364 FIRM NO. 1,375.

Nothing less than removal of German tariffs would enable us to compete against that country either in England, Germany, or any other part of the world. In our opinion it is because Germany by her tariff is able to secure her home market that she is able to attack us elsewhere.

We find, by reason of the higher prices obtainable in her own country, Germany is able to send her surplus products to the Colonies in competition with our own, and so far with reasonable success. Sentiment alone has been the only cause for this practice not being of greater extent.

365 FIRM NOS. 1510 & 1,511.

Suggested Reduction in Foreign Duties.

Description of commodity.	Country.	Present Tariff.	Suggested Reduction.
Tinplates.	U.S.A.	1.5 cents. per lb., or 7s. per cwt.	With a tariff of 5 per cent. to 10 per cent. <i>ad valorem</i> , we should be able to compete with all these countries.
	Germany.	2s. 6½d. per cwt.	
	Russia.	15s. 3d. per cwt.	
	Spain.	8s. 2d. per cwt.	
	Italy.	7s. 4d. per cwt.	
	France.	5s. 3½d. per cwt.	

N.B.—The present price of English tinplates is about 10s. 9d. per cwt. net. The above tariffs, therefore, amount to from about 25 per cent. to 150 per cent. of the value.

The present tariff of the United States is not only sufficient to enable that country to keep out our tinplates for home consumption, but places her in a position to compete with us in other markets, and this, notwithstanding the higher wages, &c., paid in America. The factor of large production, coupled with large home consumption, facilitates this operation.

The new commercial treaty between Great Britain and Germany, provides for an increase of 3d. per cwt. on tinplates, viz., from 2s. 6½d. to 2s. 9½d. and it is rumoured Italy proposes to raise its tariff from 7s. 4d. to 7s. 7d.

366 FIRM NO. 1,512.

Suggested Reduction in Foreign Duties.

Description of Commodity.	Country.	Present tariff.	Suggested reduction.
Steel bars.	Germany.	23s. 5d. per ton.	We might possibly be able to compete if the tariffs of these countries were reduced to 5 per cent. to 10 per cent. <i>ad valorem</i> .
	America.	46s. 8d. per ton.	

367 FIRM NO. 1,541.

Cleveland pig iron is exported to almost every country in the world, in spite of tariffs—obviously, therefore, any reduction whatever in the tariffs would increase our trade. The most promising fields would be Germany, France, Russia and the United States of America.

(F) LOSS OF EMPLOYMENT.

368 Question 9 (Form IV.):—*Taking 1903 as an example, can you give any statistics as to the loss of employment in your establishment due to the importation of goods you could have manufactured?* **Loss of Employment.**

369 FIRM NO. 646.

Owing to the low prices of imported Belgian merchant iron, we closed our forge and gave up making merchant iron for the time.

370 FIRM NO. 692.

We are unable to give any reliable statistics as to the loss of employment in our works in consequence of the importation of foreign competing goods, as this has not taken place to any appreciable extent as yet, but should such competing goods be sold in this country in any quantity, the loss of employment to workmen would be serious.

371 FIRM NO. 785.

It is difficult to estimate the exact effect of the import of foreign goods upon our trade, but probably it may be fairly represented by a reduction of 20 per cent. in the volume of our manufactures.

FIRM No. 844.	372
We have only been able to keep our bar mill department working single shifts instead of double shifts; this means a loss in wages to workmen of about £5,000 during the year. It is difficult to distinguish between loss of output due to slackness of trade and imports from abroad. On the whole, we think that the present and late loss of output is almost, if not entirely, due to imports. For the latter half of the year, our forge has not been working, owing to dulness in local bar iron manufacturers' works and sheet iron department, caused by increased importation of finished bars, &c., by the local consumers, from Germany and Belgium. The loss in wages to our workmen through this stoppage is £3,090.	
FIRM No. 906.	373
No loss of employment in our establishment due to importation.	
FIRM No. 916.	374
It may be taken that our output would have been increased to the extent of 50 to 75 per cent.	
FIRM No. 984.	375
Over the year 1903, our output of bar iron, hoops and sheets was fully 20,000 tons below the normal capacity of our works, and represents a diminution of at least £30,000 in the wages which would otherwise have been earned. This falling off we attribute either directly or indirectly to the importation of goods we could have manufactured.	
FIRM No. 1,003.	376
We employ about 400 men, and lost last year fully three months' work.	
FIRM No. 1,023.	377
We should have paid some £8,000 more in wages alone in producing steel, which was imported into this town, especially billets and bars from Germany and the United States and forgings of every description from Germany.	
FIRM No. 1,171.	378
A good portion of the year we are only worked four days per week. This loss of time was solely on account of German competition. At the time we were doing this, the Germans were making a clean sweep of the London trade, Bristol, Hull and Leith; in fact, anywhere they could reach by water. We did not feel their competition so bad in the interior or country districts.	
FIRM No. 1,188.	379
Without any definite and absolutely reliable information before me as to wages paid for different operations (this being very difficult to obtain, owing to the great detail), it would be almost impossible to give accurate detailed information on this subject. An illustration may, however, be useful. In 1895 we were selling anchor heads of many thousands a year value. In 1896, 1897, 1898, 1899 and 1900, this trade has gradually lessened owing to German competition, until now, 1904, our accounts are all closed—a loss in wages to the British workmen of nearly £2,000 a year in a comparatively small business, though equipped with fairly modern plant.	
FIRM No. 1,244.	380
In 1901, when Germany was not competing seriously against us for a certain article, the value of our turn-out of this article was £7,000 for the year. Towards the end of 1902, Germany began competing seriously in this line, and our turn-out fell to £2,870 for 1903, causing a reduction in wages of, approximately, £2,000 a year.	
FIRM No. 1,276.	381
In 1903, we paid only £7,092 in wages as opposed to £10,890 in 1899, £10,607 in 1900, and £10,648 in 1901—a reduction of about 35 per cent. on the average of these three years. Our principal trade is the manufacture of forgings for steamers, both for merchant marine and government steamers. The reduction in tonnage of mercantile steamers built in these years was about 24 per cent., while there was an increase of 12 per cent. in the volume of this trade. As the sugar mill trade and large electric engine trade for which we also made forgings had very much increased in that same period, we are of opinion that our employees lost 20 per cent. of wages in 1903 owing to the importation from Germany and Denmark of marine shafting and other forgings which would otherwise have come to the British forges.	
FIRM No. 1,375.	382
Over 1,000 men have been dismissed from their employment from the older portion of the works. Not at present prepared to remodel with the present prospect of continuity of profitable employment. Although with the exception of extended holidays, particularly at the latter end of the year, we are able to work full time in the remaining portion of our iron and steel works during 1903, we did so entirely because our neighbours—Blaenavon, Tredegar and Rhymney—have retired from the contest, and have therefore left us what little market there is practically to ourselves. We cannot, however, ourselves as yet complain of insufficiency of work, but we do seriously complain of the price for that work having been made a ruinous one by reason of competition from Germany and other countries.	

383 FIRM No. 1,408.

Our export trade has not suffered because we have practically never had a large volume of it, but our home trade has suffered seriously owing to German influx of steel shafting, stern frames, rudders, &c.

We enclose a photograph of a new shop which has cost us £40,000, but, owing to the continued German competition, it has remained idle ever since it was erected.

We are now only engaged in rapid repair work, which, by reason of time alone, the German forgemaster cannot compete against. If he could by any means capture our repair work too, we should have to close our works.

384 FIRM No. 1,427.

We may point out that twelve iron or steel manufactories in the North of England have been wholly or partially closed, and we understand that the foreign steel imported into this country has increased from about 760,000 tons in 1900 to 1,321,000 tons in 1903.

385 FIRM No. 1,534.

Two mills lost 14 weeks each during 1903.

One mill lost 10 months.

One mill lost 5 months.

386 FIRM No. 1,568.

For some years, up to the autumn of 1900, a large firm of galvanizers and makers of tanks and cisterns regularly bought from us about 500 tons of steel sheets per annum, but at that time they commenced using Belgian or German material, with the result that they bought nothing from us in the years 1901 and 1902, and only five tons in 1903. The effect of this upon our workmen was that they lost from 300 to 350 shifts works over the three years, or about £900 in wages.

387 FIRM No. 1,588.

During 1903, we have been working nine shifts weekly, instead of eleven possible. We have had to contend with loss of orders and those we do get, being of an inferior class for output, practically reducing our production 25 per cent. on the whole.

(G) DIFFERENTIAL RAILWAY AND SHIPPING RATES.

388 Question 13 (Form IV.):—*Please give any information you have showing the effect on your trade of the differentiation of railway rates and shipping charges by foreign countries on goods exported to the United Kingdom or other countries.* **Differential Railway and Shipping Rates.**

389 FIRM No. 136.

We find railway rates to port very high in comparison with rates charged in Germany for the same distance, and such heavy charges seriously handicap us in competing with German houses, particularly in heavy goods.

390 FIRM No. 312.

We have really no definite data to go on here, but we know from reports received that freights on steel exported from the United States and Germany are less than from British ports, and, in addition, substantial rebates are received on such freights. The question of freights from the States to South Africa, as compared from England, was publicly discussed. The same applies to New South Wales.

Further, British shipping companies charge more favourable freights from foreign ports to England than they do from England to foreign ports; but we presume you will be in a better position for obtaining information in this direction than we are. We may, however, cite an instance in this connection that has come within our own experience within the last week in the matter of an order for 150 tons angles for Piræus, where our customers informed us that our price was more favourable f.o.b. Hull, than that of our foreign competitors f.o.b. Antwerp, but the British shipping company's rate of freight from Hull to Piræus was 20s. per ton, against a freight of 8s. 6d. per ton from Antwerp to Piræus. We lost the order accordingly.

391 FIRM No. 646.

The preferential rates given to foreign goods handicaps us. Their nails are sent from abroad into our Midland towns at lower prices than we can get them sent to our local ports, and then sent on to the Midlands, although the said goods are shipped through the same ports. Also the preferential freights from Antwerp to China handicaps us as we have to pay 7s. 6d. to 10s. per ton more from Newport to Shanghai than Belgians do from Antwerp to Shanghai.

392 FIRM No. 692.

We have no definite information we could put forward with respect to this, but we may say that we took occasion during the last day or two to inquire the rates on steel billets from these works to Hull, Goole, Liverpool, Birkenhead, London and Middlesbrough, and we are assured by two railway companies, namely, the Midland and the North Eastern, that the rates were the same in any case. They put forward the explanation that such goods coming over in bulk were taken at lower rates by the shipping companies, being carried as much by way of ballast as anything else, and that there was no advantage offered to foreign importers by them.

FIRM No. 808.	393
Total freight and carriage from Antwerp to Birmingham on wire nails, two tons and up, is 13s. 4d. per ton. Our railway rate from Birmingham to London is 12s. 6d. for four ton-lots and up. The rate from the Continent to London is, of course, much less than to Birmingham, and this helps to shut us out of the London market, which is a great distributing centre for the Continental importers. Many similar instances might be given.	
FIRM No. 842.	394
New York to Auckland. New York to Cape Town. Germany to India.—We have lost orders because of the cheaper rates from foreign countries to these British markets, than from Great Britain to the same markets. It costs the Americans less to deliver their goods into the heart of our markets than it costs us, who are in the chief manufacturing area for such goods in Great Britain.	
FIRM No. 862.	395
Steel blooms and bars cost practically the same in freight from Antwerp to Bilston, as from Bilston to London.	
FIRM No. 886.	396
The differentiation of railway rates and shipping charges has, without doubt, assisted our foreign competitors in obtaining export business, both in the United Kingdom and in other countries, as without such assistance in connection with goods intended for export, there is no doubt we should have experienced less formidable competition.	
FIRM No. 906.	397
Cheaper railway carriage is very helpful to Continental manufacturers of pig iron, but cost of manufacture on the Continent is above that of iron made from ores in the Cleveland district. This firm manufactures foundry and forge pig iron, principally for the home market. Home trade in recent years represents 88 to 96 per cent. of total make.	
FIRM No. 1,171.	398
The rate of wire rods from Antwerp or Rotterdam, <i>via</i> London or Gloucester, direct to our works and unloaded here free, is 13s. 6d. per ton. If we want to send the same goods to London only, we have to pay 15s. per ton, or 1s. 6d. per ton more than the foreigner pays for the whole journey.	
FIRM No. 1,323.	399
We are undoubtedly severely handicapped in our competition with foreign countries for work in this country by the preferential terms given to foreign countries not only by shipowners, but by the railway companies in this country, the latter giving greater advantages in conveying foreign material from ports inland, not only in rates, but in storage facilities.	
FIRM No. 1,375.	400
We have nothing to complain of, enjoying as we do the preferential rates in force when we gave up our interests in the local railway to one of the great railway systems.	
FIRM No. 1,386.	401
Foreigners have an advantage to a large extent by reducing railway rates and canal rates and freights, also by the bounty system compensating for losses incurred by dumping surplus production into other markets. Also by division of labour-keeping one mill and one set of men to one class of work, and another to another set.	
FIRM No. 1,458.	402
We have to complain of the undue preference given both to foreign and American manufacturers generally, in regard to freights and through railway rates. We object to the introduction in the contracts or tenders of the Government, municipalities, and other public bodies, insisting upon the payment of standard trades union rates of wages, in view of the fact that tenders are invited from foreign competitors, who are not subjected to such restrictions.	
FIRM No. 1,567.	403
The carriage from Motherwell to Manchester is 15s. per ton, yet the Americans can deliver steel from their seaboard to the same receiving point at <i>one third</i> of the money.	
FIRM No. 1,588.	404
Railway rates and shipping charges are made to favour the exporter abroad, and, unfortunately for the home trade here, the railway rates in this country are made to favour the importer as he sends in quantities. We suggest that the railway companies here should give special rates for our export trade in the matter of quantities.	

(H) ADVANTAGES OF INDUSTRIAL COMBINATIONS.

**Advantages of
Industrial
Combinations.**

405 Question 12 (Form IV.): - *To what extent do you think that the recent developments of combinations in foreign countries give them an advantage in economising in the production of the class of goods produced by you, and in the expansion of their export trades? Please give such particulars as you can.*

406 FIRM No. 312.

Generally speaking, this is a very difficult question to answer. It covers such a wide field, but undoubtedly combinations in the States have resulted in very considerable economy in production. This has, however, to a large extent been counterbalanced by financial recklessness and over capitalisation, the effect of which has temporarily nullified the advantage gained in the direction of cheaper production.

The latter phase of the question will, no doubt, be rectified in the course of time. It is difficult in Germany where they have gained enormously by combination.

The powerful combines in Germany have not only enforced concessions from the State Railway companies and carriers generally, but upon every ton of material they export, they secure an export allowance. This allowance is obtained on all fuel, and on practically the whole of the raw materials used to manufacture the exported commodity, and is made by the loss sustained, and so help the manufacturers to attain their ends.

407 FIRM No. 350.

We do not believe the combinations lead to any economy in production. They are merely vehicles for expanding the export trade by subsidising this by moneys drawn from artificially high prices in the home trade.

408 FIRM No. 619.

In our opinion, the chief advantages are these:—

(A) Maximum output, thereby keeping all tools in continual use.

(B) Best terms in purchasing raw material, fuel, &c., on account of the importance of these transactions.

(C) Decrease in amount of on-cost chargeable to each item manufactured.

On the other hand, the obvious difficulty of careful management of large combines is a factor in favour of the individual manufacturer.

409 FIRM No. 692.

We are not aware of any combinations of foreign competitors in the trades with which we are concerned, except in America, namely, the Pressed Steel Car Company of Pittsburg, in which case we have information to the effect that, through the combination of the various interests centred in that organisation, some economy has resulted in the production of their goods, but, as the Americans do a class of wagon work which would not be accepted by English or Indian engineers, the competition with them is not particularly serious, the effect in some orders which have been given to them in South Africa, for instance, having been to practically close the door against them on account of bad workmanship, but they recently secured a trial order of 10 wagons (35 tons) in Natal.

410 FIRM No. 720.

We are not of the opinion that these foreign combinations give any advantage in economising in the production, but without them prices could not be kept up in their home markets; consequently, they could not expand their export trade without regard to cost.

411 FIRM No. 768.

We have no actual knowledge about the internal methods of the large combinations in foreign countries in the wire trade. It is common knowledge that with their protected home markets, the wire manufacturers in Germany and the United States have such a large portion of their trade secured to them that they are encouraged to spend money in improvements of plant and in increasing their promotion, by such means reducing their costs as far as possible. This again re-acts upon their sales, and results in strong and powerful combinations. It is admitted that competition in the wire trade is of special severity, and the difficulty of the English manufacturer is naturally not diminished by the fact that there is so little temptation at the present time to put additional money into the business and so little security for the capital already invested, seeing that at any moment it may be utterly destroyed by the action of the foreigners.

412 FIRM No. 785.

Pig iron.—Combinations in the United States may enable United States producers to sell pig iron in this country under cost, whilst they make their profits out of the enhanced price charged to the home consumer.

Bar iron.—Ditto.

Steel billets and bars.—Ditto, at 5s. to 7s. 6d. per ton below the cost of production in this country.

413 FIRM No. 844.

We are doubtful if combinations are of any assistance in promoting export. We believe the true cause of the severe German competition is that protection has so stimulated production that this now exceeds consumption, and this excess must necessarily be exported at any price, sooner than the works should stand idle.

414 FIRM No. 888.

The developments of combinations in foreign countries has doubtless had the effect of reducing their costs of manufacture, but we are of opinion that one of the chief factors in the expansion of their export trade is the protection of their home markets, which enables them to dispose of any surplus production at prices with which we are unable to successfully compete.

FIRM No. 911.

Combinations have resulted in the control of the home market. This has enabled home prices to be maintained at a very profitable level and hence export can be resorted to at an actual loss, should the home market not have absorbed the whole production. Full work is absolutely essential to economical production. Two causes may militate against cheap cost of production in foreign countries:—(1) Curtailments of output due to the closing of the dumping ground when the home demand fails; (2) Loss of control of the home market if the combinations broke up and therefore inability to export at a loss as a means of keeping the works fully running.

415

FIRM No. 964.

Germany and the United States have undoubtedly secured advantages in the promotion of economies, &c., from their trusts and combinations, but whether or not such a state of things can be permanently maintained, is another class of question which will require a much longer experience than is at present available for its solution.

416

FIRM No. 1,171.

We are not convinced that these huge trusts always work more economically than the smaller makers at home. We prefer the individuality of the smaller makers. At any rate, this is our experience of our own trade. On even terms, as to selling price, we think the smaller maker puts more time into the manufacture of the article, and less into over-looking, and so very often secures a better article for the same money as the big trust, who depend for their extra profit on the money they save in management. By excessive management, we find trusts often stifle effort.

417

FIRM No. 1,187.

We believe that if the business of tinplate making in this country were combined in the hands of not more than five firms, that would do more to keep it fairly prosperous than any other measure. A large trade combine can always expend money on developing its trade and acquiring information, where a number of small firms will not, partly because it can regulate its prices better, so as to have the necessary money to expend, and partly because the return will benefit the combine who spends the money, whereas money expended by a small firm on such purposes benefits its competitors far more than itself, because its output is such a small part of the whole.

418

FIRM No. 1,276.

We do not think that these combinations have effected "direct" economies in the production of forgings, other than those already effected in this country at the large forges, which make their own steel and machine their own forgings when their customers wish this done. They have effected, no doubt, indirect economies in keeping down the workmen's wages and holding them under stricter discipline than a number of independent and competing establishments could have done.

419

In the expansion of export trade, they have, it is said, encouraged those forges best situated for export to leave the home business to the forges further inland, and so save an amount of cross country railway carriage that would have tended to handicap export. We understand (but we have no proof of this) that they have also paid compensation to the forges doing this cheap export business, which otherwise would not have been carried on.

FIRM No. 1,323.

The combinations in foreign countries seem to have increased the facilities for "dumping" in this country, and we are now having to compete with a very large combination in America, namely, "The American Bridge Company," who have taken large contracts very much under the cost price, notably the bridges for the Uganda Railway.

420

FIRM No. 1,375.

As compared with our own establishment, which is sufficiently large to be—with the exception of our iron ore supply—self-contained, and to be able to afford to employ first-class officers, there are no advantages in these large combinations. In fact, their unwieldiness gives us an advantage.

421

FIRM No. 1,588.

Combinations are all very good for economies in the way of standardising and arranging output, but the benefit of individual enterprise is lost in the combine. We believe with tariff justice, Great Britain's individuality, as it were, would hold its own with ease.

422

(1) REMEDIAL MEASURES.

Question 10 (Form IV.):—*Do you think that the importation of iron and steel manufactures below cost requires remedial measures, and, if so, of what character should such measures be?*

423

Question 7 (Form IV.):—*What minimum duties, if any, on the articles imported, similar to those you manufacture, do you suggest as sufficient to safeguard the interests of your trade?*

FIRM No. 350.

A tax on foreign blooms and billets, while no doubt benefiting a few of our large steel works, would cause a serious rise in the cost of manufacturing finished iron goods and would thereby strike a heavy blow at the prosperity of this branch of the iron trade, which employs ten times as much labour as the large steel works.

424

It cannot be too strongly pointed out that a tax on foreign imported blooms would seriously hamper our manufacturers in competing with the foreigner in the markets of the world, while at the same time, through the closing of our market to him, would make that competition more strenuous than hitherto.

425 FIRM No. 692.

We are certainly of opinion, from a manufacturers' point of view, that the importation of iron and steel manufactures below cost price does require remedial measures, as the effect of such importation is to seriously curtail the employment of the wage-earning classes.

From the point of view of a constructor using such material, the matter is open to question, and it appears to us, to sum it up in a simple manner, that the question is—Is it better for us to pay slightly higher prices for material manufactured in our own country, where our own capital and labour are employed in its production, or to send our money abroad without any adequate compensating advantages? Probably the readiest means of remedying the matter would be by the imposition of an *ad valorem* duty on the basis of the amount of labour that has entered into the production of any article in the exporting country.

426 FIRM No. 768.

The answer to this question must depend upon the general policy adopted by this country. Should a duty be put upon the partly manufactured articles, a higher duty would, we presume, be applied to the finished article. These two points, therefore, must be regarded in relation to one another. If, however, we were asked for a suggestion we would certainly think that an import duty of 25 per cent. *ad valorem* might be advantageously imposed. The articles which we manufacture are as follows:—

Wire netting, wire ropes, all classes of steel and iron ware, bright, annealed, galvanised, coppered, tinned, including amongst others, fencing wire, telegraph wire, mattress wire, rivet wire, bench wire, weaving wire, netting wire, roping wire, spring wire, &c., flat wire, shaped wire, barb wire, fencing, signal and stay strand, wire staples, wire nails, &c.

427 FIRM No. 735.

The remedy we propose is:—

A duty of 15 per cent. on pig iron.

A duty of 20 per cent. on rolled iron bars, &c.

A duty of 10 per cent. on partly manufactured goods such as steel ingots and billets.

428 FIRM No. 808.

We do not wish to compete in foreign countries; we only want—

(1) Our own home market, or even a reasonable proportion of it, and

(2) Our trade with the Colonies, which we feel is more secure under the influence of the preferential tariff scheme, as far as it has gone, and which we hope to see adopted in its entirety.

Apart from the wire nail trade referred to above, which is considerable, and some minor lines, we do not find much foreign competition in our goods in the Colonies; this is probably owing to the very small margin there is on the trade generally, leaving no inducement for competition.

10 per cent. on imported wire nails would help considerably, but it would require a duty of 15 per cent. or 20 per cent. to put us on an equal footing, as some less duty would have to be imposed on imported wire.

429 FIRM No. 844.

It would not require many shillings per ton on steel bars (over and above any duty on raw material) to protect us. At the same time, we should add that the Belgian imports into this country are a comparatively new feature, and it is difficult to say whether this competition will increase or decrease. On the whole, we think the latter.

430 FIRM No. 886.

The minimum duties, sufficient to safeguard our home trade, are a matter for consideration and discussion, but the following figures show the relative values of British and foreign iron and steel at the present time:—

Pig iron, American, 49s., d.d Manchester Docks, ours 54s. 6d.

Bar iron, Belgian, say £5 7s. 6d., d.d Manchester Docks; ours £6 5s.

Iron plates, Belgian, say £5 18s., d.d Manchester Docks; ours £7 5s.

Iron sheets to 1 in., say £6; ours £7 15s.

Steel girders, Belgian, say £4 14s.; ours £5 7s. 6d.

Steel billets, American, £4 2s. 6d.; German, £4 5s.; ours £4 15s.

Steel sheet bars, American, £4 5s.; German, £4 7s. 6d.; English Siemens, £4 10s.

All the foregoing prices are for net cash.

431 FIRM No. 1,178.

I consider that an import duty of 25 per cent. should be imposed.

432 FIRM No. 1,185.

No remedial measures required. On the contrary, the purchasing of cheap material enables us to compete successfully with the Continental manufacturers. We find, however, that the London and Birmingham markets for hardened and tempered busk steel, have been greatly affected by foreign competition from Germany and United States of America.

433 FIRM No. 1,276.

We consider that the present foreign competition in the iron and steel manufactures is unfair and in the forge trade, is so severe as to threaten the extinction of the industry; we, therefore, think that remedial measures are required, and as a start would suggest the imposition of tariffs exactly equal to those imposed upon our iron and steel goods by the foreign country.

Smart import duty coupled with Colonial preference. Retaliation, as the writer understands the present use of the term, is useless.

Remedial measures required, but with reservations.

Raw material, or on which no labour has been expended, ought under all circumstances to be free.

Partly manufactured goods, the raw material employed in which can either be obtained in this country or imported, ought to have a duty put on them (see below); but where it can be conclusively proved that the labour lost by the non-production here of such partly manufactured goods is more than counterbalanced by any greatly increased sales (in manufactured or finished goods) resulting from any saving effected owing to the manufacturer of the finished articles being able to purchase the partly manufactured foreign material at a lesser cost than similar English material, such partly manufactured material should be allowed a free entry.

Manufactured goods, of which the raw material for making similar goods can be obtained in this country or imported, should bear a tax equal to the tax imposed by the country from which they are imported upon similar goods bought by it from this country, and where it can be conclusively proved that the wages paid in the said country are lower than those paid here, an extra tax, equal to the difference in the wages between the two countries, ought to be added in addition. No goods should be taxed from countries who allow similar goods from us a free entry.

33½ per cent. on steel music wire for use in pianofortes, &c.

25 per cent. on drawn steel wire suitable for making into springs, in thick sizes, viz., .072 inches and larger.

15 per cent. on rolled wire rods out of steel containing .59 per cent. carbon and over suitable for drawing down into wire.

Iron Ore.—Free.

Pig Iron.—2½ per cent.

Semi-manufactured Steel, such as Blooms, Billets, &c.—5 per cent.

Finished Steel Plates, Bars, Rails, &c.—10 per cent.

Manufactured iron and steel bars.—Ten per cent. might enable us to compete successfully.

If we could add 12½ per cent. to our home trade and 12½ per cent. to our foreign and colonial trade, thereby giving us full time, it would be an immense advantage. If by any fair means the Indian trade could be reserved for Great Britain and Ireland, say by reciprocity, the Iron and Steel trades would be greatly benefited here.

(J) EFFECTS AND INCIDENCE OF IMPORT DUTIES.

Question 8 (Form IV.):—*If such duties were imposed what, in your opinion, would be the effect (A) upon prices in the Home Market, (B) in securing greater continuity and security in the Home Trade, (C) in promoting economies of production, (D) in increasing employment, and (E) in increasing wages?*

(A) Prices in home market would not be materially altered.

(B) Greater continuity and security in the home market resulting in much greater enterprise on the part of manufacturers.

(C) Reduced cost would result.

(D) More employment would follow.

(E) Wages would no doubt be higher but not considerably, as manufacturers would be better able to specialise and keep cost of wages from any considerable increase by improved methods of manufacture.

(A) Prices would be raised in the home markets.

(B) As a consequence, a securer home trade would be created, but not of greater continuity than at present.

(C) This action would also promote economies of production: firstly, by the larger demand that would arise for home manufacture; secondly, and mainly, by capitalists adopting methods of cheaper manufacture, that is, by improving their plant, as under the conditions which would then obtain, they could rely upon a certain return for their enterprise.

(D) Increased employment would be called for by the demand for larger outputs thus required.

(E) Cannot speak definitely as to increasing wages. Wages are not regulated entirely here by supply and demand; they are regulated by trade unionism.

(A) Prices would go up.

(B) Only where the home trade was purely a home industry.

(C) Certainly not. It would lead to an immense reliance on the tariff.

(D) & (E) As our foreign trade would fall off as a result of the increased cost of production, these would probably be worse.

Germany and America have given ample evidence of the conditions under which alone a strongly protected country can do an export trade. They keep up high prices at home and dump abroad, viz., bleed their home consumer to give the foreign cheap material.

- 442 FIRM No. 567.**
 (A) The prices in the home market would assume the level brought about by fair competition.
 (B) There would be a greater scope and inducement for enterprise on account of the greater continuity and security of trade.
 (C) Continuity, of course, promotes economies.
 (D) & (E) Gives regular employment and thus more money to the workmen.
- 443 FIRM No. 619.**
 (A) We do not believe that prices at home would be materially affected by a 10 per cent. tariff, as competition in this country would be sufficient to counterbalance any tendency to raise the price of the home-made article; but increased wages might cause a rise in the price of the article.
 (B) If foreign competition were excluded from home market, or at least a paying price ensured by the imposition of a tax on imports, greater continuity and security should logically follow to home manufacturers.
 (C) We do not see how economy could be effected in production, but rather think cost of manufacture might be increased by
 (E) A rise in wages.
- 444 FIRM No. 646.**
 (A) Prices would, perhaps, rise 10 per cent.
 (B) Very much greater continuity in the home trade.
 (C) Would make trade more worth doing and give inducement to bring all motive power and plant generally up to date.
 (D) Employment would be increased.
 (E) The tendency would then naturally be to increase wages.
- 445 FIRM No. 692.**
 If a duty was imposed upon corrugated furnaces, owing to the competition amongst English makers, it would not have the effect of (A) increasing the price. (B) But it would certainly tend to promote the continuity and security of our own trade, as, were the German invasion to become serious, and our boiler builders to buy the German flues in any material quantity, it would mean the destruction of this industry. (C) There is a continual effort being made by manufacturers in this country to effect greater economy in the production of their manufactures, and, if duties were imposed on manufactured articles, we are of opinion that it would not in any degree lessen the present straining after economy in cost of production. (D) Provided the duty was such as to effectually shut out foreign goods, there would certainly be an increase in employment for our own workmen. (E) We do not feel disposed to offer any opinion, as there are so many factors affecting the rise and fall of wages, the chief of which is the action taken by the different trades unions in the country.
 We have reduced our cost of corrugated flues over £8 per ton within the last few years, the whole of which reduction has gone to our customers.
- 446 FIRM No. 720.**
 The price of pig iron would improve, but we cannot say to what extent. The trade would not suffer from such violent fluctuations, and altogether would be more secure.
- 447 FIRM No. 752.**
 In our opinion prices would not be appreciably altered owing to competition of home manufacturers.
 (A) In view of the fact that German prices for such wire as they send to this country are very substantially lower than the prices which English manufacturers can afford to accept, with a profit, there can be little doubt that the result of a substantial import duty would have only a small effect in the direction of increasing prices at home.
 (B) We believe your investigations will prove that the imports of wire and wire manufactures to this country are great and increasing. The result of an import duty would enable the home manufacturer to secure orders at present being placed out of the country, and the result would be to secure a greater continuity and security in the home trade.
 (C) To encourage manufacturers to spend money in putting down new plant, and so promote economies of production.
 (D) The increased business resulting from the reformed policy, and the expenditure of capital owing to the greater security of trade, would result in steady and increasing employment to the working classes.
 (E) The above tendency naturally would be in the direction of increased wages.
- 448 FIRM No. 785.**
 (A) The price would be raised to the consumer by the amount of the duty.
 (B) More regular trade would be secured.
 (C) Cost of production would be decreased probably to the extent of 10 per cent.
- 449 FIRM No. 808.**
 (A) Prices of cut nails would probably be unaffected. Prices of wire nails would rise slightly, but not to the extent of the duty; the ruling prices for wholesale orders for wire nails are under cost, owing to the system adopted by foreign makers. Prices of rivets, screws, washers, &c., would probably be very little affected.
 (B) There would undoubtedly be greater continuity and security in the home trade, and this is one of the most needed elements at the present time.
 (C) Economies in production would be promoted, owing to larger volume of trade, and the greater security given to capital, which would be encouraged to invest in the most economical, but often expensive, plant.
 (D) There would naturally be an increase in employment, when the home trade, or a fair part of it can be ensured, and for export we could then meet foreign manufacturers on equal terms, with the home market and a larger output to help us.
 (E) There would, no doubt, be a general tendency for wages to increase, owing to a greater demand for labour.

FIRM No. 842.

- (A) We do not think they would increase prices in this country.
- (B) They would certainly secure greater continuity and security in the home trade.
- (C) We do not see that any economies in production would result from such duties.
- (D) It seems clear to us that if British manufacturers made the goods presently imported from America and elsewhere, there would be more employment.
- (E) Wages would be at least sustained, and probably increased, because of less "broken time."

450

FIRM No. 843.

- (A) The effect would be nothing at the place of production, but the home market would be secured to the home producer at points where carriage now favours the foreigner.
- (B) It would certainly secure greater continuity of trade.
- (C) Cost of production is largely a question of steady and regular work.
- (D) & (E) Wages are regulated by supply and demand. Regular work means regular wages and probably higher wages.

451

FIRM No. 844.

- (A) Price enhanced, but not to the full amount of the duty.
- (B) Home trade would be much improved, but there is severe competition among manufacturers in this country, and periods of depression in the trade would doubtless occur periodically, notwithstanding that a duty were imposed.
- (C) Economy would not be directly promoted, inasmuch as some makers might be content with their plant if they obtained a better price for their finished article, but indirectly great economies would result; thus, if imports ceased, the output of manufacturers would have to increase, and with this increase in view, a manufacturer would be encouraged to put down new plant of the most modern type.
- (D) Increase of employment necessarily follows on increased output.
- (E) Wages in this trade, being regulated by the selling price, would rise with any advance in price.

452

FIRM No. 862.

Will not in the long run enhance prices in the home market at all. Spasmodic dumping would be prevented and a sense of security would be obtained, which would enable manufacturers safely to make the large outlays necessary to keep their works up to date, and to adopt new methods of cheapening production and saving labour. Undoubtedly employment would be thereby increased and wages enhanced.

453

FIRM No. 886.

- (A) Prices in the home market would tend to advance somewhat, inasmuch as the competition with foreign material would be conducted on more equitable lines, and home makers, instead of being compelled to sell at a loss in most cases, or to keep their plants running short time as at present, would be enabled to secure business with a margin of profit.
- (B) Great continuity and security would be obtained in the home trade, inasmuch as prices would become steadier, and would not be subject to the excessive fluctuations which are now experienced, owing to large shipments of material being made to this country under cost of production.
- (C) The home market being made secure, and assuring to British makers a certain output at fair prices, would enable them both to reduce costs of production by means of their works being kept fully employed, and also, in view of such reduced costs of manufacture, to compete more vigorously for foreign trade. English makers would also be induced to increase their capital outlay by the improvement of their plants, were they assured of a steadier market and the removal of the cause of the violent fluctuations referred to in paragraph (c).
- (D) We consider that by the protection of our home market securing to us an additional amount of trade, which is now obtained by foreign makers, would certainly result in more regular employment for our men.
- (E) We believe that, with an increased output, and a more regular demand for our goods in place of foreign iron and steel, that home manufacturers would be enabled to obtain a more profitable result in the shape of a reduced cost of an increased output, and consequently there would be more margin for an increase in wages to the men, which would doubtless follow the more regular operation of our plant. Again, more regular employment would tend to an improvement in the character of the workmen, who would doubtless produce better work, and would thereby be enabled to command a higher rate of wages.

454

FIRM No. 906.

Duties would be injurious in all cases.

455

FIRM No. 911.

- (A) Temporary advance equal to amount of duty followed by internal competition, due to the re-starting of idle works, which would probably result in a final advance of about half the duty.
- (B) Capital more easily attracted, profits larger, resulting in installation of superior machinery and lower working costs, for economy of production would follow, that is to say, the difference between the cost of the raw material and the finished article would tend to decrease.
- (D) Increased employment would certainly follow.
- (E) Wages would tend to advance.

456

FIRM No. 916.

- (A) Price would be increased somewhat.
- (B) Greater continuity and security in the home trade would follow.
- (C) Greater outputs would be secured thus, as always reducing cost of production.
- (D) Employment would be increased and become steadier.
- (E) Wages would probably increase a little in rates, but the advantage to the workman would be in working fuller time.

457

458 FIRM No. 984.

We have no suggestion to make upon this part of the question, and until the actual facts of the case, and the real position of the trade in this country are ascertained, by this or a similar inquiry, it is impossible to arrive at any reliable conclusion as to what the ultimate effect of levying import duties would be.

(A) It appears likely that the first effect, in some directions, at any rate, would be to raise prices in the home trade, and possibly to cripple such branches of the consuming market at home as serve the export trade in commodities of which manufactured iron and steel form the raw material. In all probability, such a rise, if it took place, would only be temporary as the great superabundance of capital seeking employment in this country—if the iron trade were once established as yielding a steady and remunerative return—would ensure sufficient competition amongst British makers to prevent any chance of unduly high prices in the home markets.

(B) Greater security in the home trade would, in our opinion, result from handicapping foreign manufactured iron.

(C) This would undoubtedly lead to greater economy in production by the introduction of improved processes and machinery, which at present, in many cases, are not adopted on account of the uncertainty and risk with which the dumping of foreign material enshrouds the future of the trade.

(D) Increased employment would certainly follow and

(E) This must naturally result in an increased demand for labour, and so higher wages.

459 FIRM No. 1,003.

(A) If such duties were imposed, they certainly would raise prices in the home market for a time, until fair profits produced the usual extension of home manufacturing.

(B) Prices would not fluctuate to the same extent as at present, and the home market would provide continuous and regular employment for existing works, and probably a good many new ones would spring up, causing a large demand for labour. . . .

(C) We do not see that duties would promote economies of production, unless each trade combined to purchase their raw materials *en bloc*. In this case, there need be no rise in home prices.

460 FIRM No. 1,023.

It would not materially increase prices because the power of production would be sufficient to create a competition to regulate the market. It would enable the manufacturers to produce cheaper by securing a continuity of work and promoting economies throughout the establishment. It would improve the conditions of labour by increasing wages and remove the existing uncertainty of employment.

461 FIRM No. 1,171.

(A) In our opinion, it would not raise prices at all, or very little, in the home market.

(B) It would effectually secure to us the home market.

(C) By securing to us a steady home trade, it would give manufacturers a sense of security that they do not at present enjoy, and would give them the heart to spend money on labour and cost-saving appliances.

(D) If all the wire nails* used in this country were made in this country, it would more than double the employment in this particular trade.

*Wire Nails.—Included in this term are the following classes of nails:—

Gimp pins.	Boot and shoe nails in large variety.
Escutcheon pins.	Small rivets.
Piano pins.	Plugs, &c.
Oval beads.	

462 FIRM No. 1,244.

We propose 10 per cent. duties. The effect would be:—

(A) A slight rise in prices in the home market, probably not exceeding half the duty imposed.

(B) An enormous advantage to our trade.

(C) By causing a more regular trade economies could be effected in production.

(D) Undoubtedly increase of employment.

(E) Increase of wages possible, but very doubtful.

By concentrating the whole of the requirements of certain works, most advantageously placed for their cheap production, you ensure a greater and steadier volume of trade to those works, and repetition means cheap production.

463 FIRM No. 1,276.

The effect of a duty upon foreign forgings would depend very much upon whether it was likely to be permanent or only temporary. If merely and ostensibly temporary, it would have no effect. The Germans are presently selling below cost price and in order to retain their hold upon this market, would most probably stick to the same prices and lose the amount of the temporary duty in addition to what they are at present dropping. If there were an appearance of permanency upon the duty, the price of dumped lines such as marine shafting, &c., would probably rise 25 to 30 per cent. to a level something like cost. Other forgings, such as land engine forgings and sugar mill forgings, might rise about 10 to 20 per cent., which is about the lowest British cost at present, but the assurance of continuity and security in the home trade against unfair foreign competition would very soon induce the British forgemasters to purchase hydraulic plant of the latest type and other up-to-date labour saving machinery, which would reduce the costs to something close upon German costs and bring back prices to something nearer their present level. There is no likelihood of any alteration increasing the present wages paid in the forge trade as these are too high, but if no relief be given to the forge trade very shortly, about two-thirds of the present employees will be thrown out of work and the balance will, of course, obtain much lower wages. The cost of transit from Germany to this country would under "retaliatory" conditions enable us to pay higher wages here than are paid in Germany.

FIRM No. 1,323.

464

- (A) They would improve, and the ruinous cutting of prices to keep works going would decline.
- (B) The securing of more profitable work is bound to promote greater security and continuity in the home trade.
- (C) With better trade prospects manufacturers will feel justified in putting down modern plant and machinery, and so secure economies in production.
- (D) There has been a great slackness in our trade, and many firms have been compelled to considerably reduce the number of men employed. Better trade would naturally mean increased employment.
- (E) There is not much likelihood of wages being increased as they have not been reduced to follow the fall in trade. The loss through slackness has been borne by employers.

FIRM No. 1,375.

465

- (A) Duties of 20 per cent. would raise prices about 15s. a ton, which ought now to be the price, having regard to the cost of raw materials, price of labour, and tendency of local and other rates and taxes.
- (B) Improve it immensely, but note we consider that such increased price of our semi-raw materials to our English consumers would prove fatal unless their market in the Colonies were also safeguarded.
- (C) Undoubtedly; no firm will face expenditure to secure economies unless reasonable hope of continuity of employment on a profitable basis were certain.
- (D) Increased employment will follow.
- (E) The rise indicated in (A) means 10 per cent. advance in wages under the sliding scale to our 3,000 iron and steel workers.

FIRM No. 1,379.

466

- (A) None whatever, home competition being sufficient to keep the prices at their present level.
- (B) Considerable, as the present insecure position of the buyer dealing in English wire, who does not know at any moment whether his customers may renounce English goods for the cheaper foreign ones, prevents the said buyer from ordering or stocking any larger quantity of English material and the orders he gives to the English manufacturer are necessarily of a hand to mouth character, therefore small and limited in their profit earning capability. Remove this contingent risk and buyers would hold larger stocks and order larger quantities at a time.
- (C) Again considerable, as these invariably follow where regular work can be relied on, plant kept regularly going, and saleable stock accumulated.
- (D) Good, as whatever lost trade were regained the employment would be increased in the same ratio.
- (E) These would not necessarily become higher for the same amount of work, but owing to there being more work would undoubtedly be greater in total, and most likely more per man.

FIRM No. 1,386.

467

- (A) Prices [of finished iron] would probably run 5s. per ton higher—possibly rather more.
- (B) There would be a greater continuity and security in the home trade. Improvements of plant could be afforded and would be made.
- (C) This, by increasing the turnout, would lessen the fixed charges per ton of bars, the wages also with full regular production would come to less per ton, and the coal consumed per ton, would be less and so would the loss or waste of iron in the manufacture.
- (D) Of course, employment would be increased not only in finished iron works, but also in pig iron works, iron ore mines, coal mines, limestone quarries, also upon railways and canals and in many other ways.
- (E) Wages would be increased by sliding scales which are governed by selling prices: 5s., 2½ per cent., 10s., 5 per cent., also more constant work would mean more wages in the mass.

FIRM No. 1,567.

468

- (A) In our opinion, it would stimulate the home market.
- (B) Tend to the greater security and continuity of the home market.
- (C) Allow of more economies in production.
- (D) Broaden the sphere of employment.
- (E) Tend to increase wages.

FIRM No. 1,568.

469

If such duties were imposed, the makers in this country would be relieved from the severe competition of foreign countries from which they now suffer so severely, and prices would probably be slightly increased; but the competition amongst ourselves would still be an important factor in preventing any undue increase.

There would also be greater continuity and security in the home trade, as a consequence of foreign material being made difficult of entry. The severe competition which is always going on among ourselves would still remain as a spur in the direction of the adoption of any and every means of cheapening production. There would naturally follow increased employment for the workmen, and the tendency would decidedly be in the direction of increasing wages.

FIRM No. 1,583.

470

- Ten per cent. tariff (as a stand-by): -
- (A) Might increase the home price by 5 per cent.
- (B) The other 5 per cent. would be taken up in advantage by (C) and (D), constant employment reducing the running expenses, and it is probable all the tariff would be met in this way and so be rather an advantage to the consumer in the end.
- (E) Wages would be increased 25 per cent. all round.

(K) COLONIAL PREFERENTIAL TARIFFS.

Colonial
Preferential
Tariffs.

471

Question 14 (Form IV.):—What is your experience with regard to the effect of Colonial or other Preferential Tariffs?

472

FIRM No. 358.

We have derived a slight advantage from Canadian preference in competition with United States. Have lost very considerable trade in Canada owing to United States competition.

473

FIRM No. 692.

We have no experience, so far as our manufactures are concerned, as to this, but speaking generally, we should say that where preferential tariffs are in operation such are beneficial to our manufacturers. The effect of the Colonies being able to obtain goods from the home country at a lower duty than is imposed on foreign competing goods, allied to the sentiment which is more or less present even in strictly business affairs, is certainly beneficial to us.

474

FIRM No. 836.

We lost for years to a very large extent the Canadian trade, whose requirements were supplied by America and Germany. Two years ago, we recovered this trade owing to the fact that America was fully occupied in supplying the wants of her own home market, and the imposition of a surtax on German material by the Canadian Government. America is again competing for Canadian orders, notwithstanding the slight concession allowed British manufacturers to secure the bulk of the business.

The Canadian preferential tariff has been of assistance to this country and the imposition of a surtax on German imports has caused trade to come to this country which would otherwise have gone to Germany.

475

FIRM No. 842.

We can trace a beneficial result to ourselves from the preferential tariffs now prevailing in South Africa and New Zealand in favour of Great Britain.

We have been assured by Colonial buyers that when prices and other conditions are equal, the home country will get the preference. We are of opinion that preferential tariffs already mentioned, help the manufacturers in the struggle with foreign competition.

We are also of opinion that the foreign manufacturers will bear at least a part of the tariff imposed upon their goods.

Doing a Colonial business, recently imposed tariffs in South Africa and New Zealand have been in our favour. Any extension of the preference tariffs in our Colonies on the lines indicated by the following certificate would benefit our trade:—

We, ... & Co., the manufacturers of the articles included in this invoice, have the means of knowing and do hereby certify, that the said invoice, being from ourselves to..... and amounting to * is true and correct; that all the articles in the said invoice are *bona fide*, the growth, produce, or manufacture of the United Kingdom, and that a substantial portion of the labour of that country has entered into the production of every manufactured article included in the said invoice, to the extent in each article of not less than one-fourth of the value of every such article in its present condition, ready for export to.....

(Signed)

Dated at, ...land, this day of, 19....

* Insert in words at length total value of invoice.

476

FIRM No. 843.

Canada.—We sent goods to last year for the first time for five or six years; before that we did a large business with Canada. Australian markets seem to be gradually closing against us.

The Canadian market, which was at one time lost, has been partially recovered to British makers by the preferential tariff.

477

FIRM No. 844.

Our experience of Canada has been entirely favourable. Our exports to Canada have increased from practically *nil* in 1900, to £9,000 odd in 1902, and £18,000 odd in 1903, and is still increasing.

This trade would not exist if there were no preference; it is not very remunerative even now, as the cutting is still severe.

478

FIRM No. 886.

Our experience is that the Colonial tariffs have enabled us, in many cases, to secure business which would otherwise have gone to our foreign competitors, but, in some instances, the benefits of such tariffs have been nullified by the more favourable rates of freight accorded to our foreign competitors on goods intended for export, and the selling of such material at prices under cost of manufacture.

479

FIRM No. 911.

We fear a dumping of these finished articles (galvanised sheets and tinplates) in the future, and should value greatly a preference in all the Colonies. The preference is not of substantial value unless the original duty is so high as to give us an advantage of at least 10s. per ton. Canadian preference in our trade is not of much value, on account of the small amount of the existing duties.

FIRM No. 934.

480

The preference in Canada has secured us orders, which would have otherwise gone to Germany or America.

FIRM No. 1.171.

481

A Colonial preference of 10 per cent. would do us a great deal of good.

The preferential tariff offered to us by Canada has been of no benefit to us, as Canada is practically self-supporting in our line. Similarly, in the case of Australia and New Zealand. In New Zealand, in particular, we are informed by our agents that the New Zealand Government insists upon everything possible being made in the Colony, even at a higher cost, and the poles used by the railway and telegraph departments are all of local manufacture.

Our Colonial sales are chiefly to India and the Cape Government departments.

Our business in the foreign and Colonial markets has been almost entirely lost, except in the case of the structural work and fencing, purchased through the Crown Agents for the Colonies, who, except in the case of bridge-work for the Uganda railway, have, by their specifications, excluded foreign material.

FIRM Nos. 1,510 & 1,511.

482

As regards Canada, their Government have for some time past been granting a bounty on the output of pig iron and steel made from ore raised in their country, and I understand a Bill has just been passed providing a further bounty of six dollars per ton on any billets made from native ore, this being in addition to the bounties on pig iron and steel.

Australia is also a market for tinplates and we understand the Government there is committed to a Bill, providing bounties on the working of pig iron and steel from native ore. The development of this bounty system by our Colonies must prejudicially affect the importation of tinplates which they now obtain entirely from South Wales.

FIRM No. 1,552.

483

Our experience is that we are colonising at great expenditure, and others get the trade. The United States and Germany compete in our Colonies favourably, due to the comparatively better position they hold on account of our isolation caused by their protective laws.

The trade of the British Colonies which this country might reasonably expect would be naturally ours is, in consequence taken out of our hands.

The United States are now competing so successfully for orders for steel rails and accessories for delivery in some of our Colonies, that to obtain any orders in these Colonies we have to sell the material at less than cost.

FIRM No. 1,567.

484

Last year we did 5000 per cent. more than in former years with Canada.

FIRM No. 1,588.

485

They protect the market for us, such as Canada, South Africa and New Zealand, and it would be worth our while to reciprocate in some way that would be mutually beneficial.

SECTION XVII.—EVIDENCE OF WITNESSES.

The following is a full summary of the evidence of the Iron and Steel Witnesses, the only omissions being portions of evidence which the Witnesses desired to be treated as confidential :—

Witness No. 1.

WITNESS No. 1.

I am prepared to give evidence as to manufactured iron, particularly bar iron, and also on steel rolling.

486

Experience of
Colonial Trade.

My firm has experience of conditions of trading both in foreign countries and the Colonies. With India, we at one time did a considerable business. With Canada, the import duties there have improved our trade considerably. We do a fair trade with South Africa and also with New Zealand since the tariff. Bar iron is the principal article we send to the Colonies.

487

The manufacture of iron has fallen during the last five years 5 per cent. in volume in the West of Scotland district. In the East we have lost India, China and Japan, for bar iron within the last 10 years. They now get it chiefly from Belgium and Germany. We have also lost the Indian trade to Belgium in the same time.

488

Profits.

The total net profits in our trade and district have diminished since 1900. The trade in bar iron and rolled strip steel for rivet and tube making has become less remunerative through Belgium and German competition within the last few years.

489

- 490 With regard to amount and continuity of employment, I may say we are working nine shifts as against eleven shifts per week during the last two or three years. We have dropped two shifts per week on account of dulness of trade. In fact, we have had to combine together in order to reduce the whole trade for that period. We are employing the same number of men, but they get less employment. The effect is to increase our cost since our standing charges are the same. That is where the Germans and Americans get the benefit over us, because with an increased export trade they are working full time; that is a very material point in iron and steel working. Not only is our own loss increased, but our workpeople lose wages also. **State of Employment, and costs.**
- 491 The competition with basic steel from the Continent has been another factor in our trading conditions. Such basic steel is competing with us in point of price. Buyers compare our iron as against basic steel. The difference of price between basic steel and iron is very little, but if anything it is to their advantage.
- 492 In order to work at all profitably, we cannot work less than nine shifts a week.
- 493 In the East, they go in for a cheap class of iron called "Belgian No. 2," and we make a cheaper class to compete with it, but still, for the sake of loyalty and friendship and patriotism, they would give us a preference to the extent of half a crown a ton. **State of Different Branches.**
- 494 In regard to manufactured iron, I think that Germany and America have the advantage over us in wages. As far as our information guides us we think they are selling for export trade below actual cost, but I have no doubt it pays them because they get a better average price on the whole of their production.
- 495 In the West of Scotland, our costs for fuel are about equal to those for Belgium. We buy our own pig iron, we do not make it. **Cost of Fuel.**
- 496 With regard to foreign railway rates, I may say that our belief is that the foreigner benefits largely by cheaper rates being given for export, and there seems to be a desire on the part of continental railways with their canals to give manufacturers cheaper rates to the port of export, such as Antwerp. We have lost that competition in our canals, at least in Scotland, but the railway companies have bought up the canals and done away with that competition. Our cost of transport to the port of shipment has been pretty much the same during recent years. For a distance of nine miles, we pay 2s. per ton. The total cost of putting it f.o.b., which will include port charges and carting down to the steamer's side, we reckon at 4s. 6d. per ton. **Railway Rates.**
- 497 Of course, it would be a distinct advantage to the export trade if railway companies could establish a difference between home and export rates, especially as they give them to foreigners. Steel billets coming to our district from Germany seem to come at a cheaper rate.
- 498 I think it would pay the English railway companies to give special rates for export. They might say we will give you special rates for 100 or 200 or 1,000 tons—there is room for improvement in that direction.
- 499 We are unable at the present time to buy steel billets at all in Scotland, they are so dear. The Germans send them in and beat them all round. The present Scottish price would be from £4 10s. to £5. The German price is £3 19s. 9d., delivered at our works, and has been as low as £3 14s. Our German billets are usually bought through merchants, and providing the quality is satisfactory, we do not inquire the maker's name. **Price of Billets.**
- 500 The billets which are being purchased in the West of Scotland from Germany has now become an established business between us. It has grown within the last year or two, and now they have really won the whole trade.
- 501 There are a large number of Scottish firms capable of producing this steel. Such firms as David Cordwell, Ltd., Steel Company of Scotland, Ltd., and firms of that class, roll their steel the same as we do ourselves, and are rather inclined to boycott us a little in billets. In Germany, and in the case of the Dominion Steel Company, and in Carnegie's Company, they have gone in for what we call the billet department. Instead of stopping at the pig iron stage they are inclined to go on to the billet because thereby they can take advantage of the initial heat in melting with the hot iron. I think that is an improvement. Pig iron manufacturers in Scotland are a little bit conservative, and they will no doubt arrive at that conclusion by and by. **Progress of German Competition.**
- 502 The Germans are now taking the next stage in producing iron bars. In Düsseldorf there are large works. I saw them doing so at the Essen works. At the moment it is an advantage to us to have this free importation of German stuff at so cheap a rate, but it is a fact that we cannot depend upon a continuation of cheap prices from abroad when they happen to have a great demand of their own. At those times we have to buy at home. The basis of our present working is a very unsound one. There is no dependence on it, and unless we can encourage the production of raw material at home, our position is a very unstable one. **Dependence on Foreign Supplies.**
- 503 I have no doubt that the expansion of British exports and manufactures to the Colonies would overcome the difficulties stated to exist in regard to return freights. **Return Freights.**
- 504 I should say that the disproportion which at present exists between the production of steel by the Bessemer open-hearth processes in this country, as compared with the proportions in Germany and the United States, is due to the extreme requirements of constructional engineers in this country as to tests, the open-hearth process meeting their requirements better. **Processes.**
- 505 In Canada we suffer from American competition; I lost an order for 1,000 tons of steel rails there last week. America also competes and Australia and the Cape, but not so keenly as in Canada. I cannot give you the reason for the loss of the order for 1,000 tons of rails; the order was intended for Cape Breton, and was worked through Glasgow merchants, who assured us we would get the order. We lost it in spite of the 33 per cent. preference. **Competition in the Colonies.**
- 506 As to the relative conditions of the different branches of the iron and steel trade, I desire to say that the methods of production in finished and manufactured iron are practically stationary. Basic steel is superseding iron rapidly. **Basic Steel.**

Witness No. 1 —continued. Finance and Accounting.	With regard to methods of financing, &c., I may say that the common practice in this country of issuing debentures in front of ordinary and preference shares facilitates our business best. Salaries are generally less on the Continent than ours, from the manager down to the workmen; compared with America we pay less.	507
	With regard to methods of checking in shops, and of prime cost accounting, I consider that our methods are quite as accurate as those in foreign countries.	508
Education.	I have no doubt at all about the fact that the systems of education abroad generally promote the production of a superior class of workmen in those countries.	509
Combinations.	As to whether amalgamations in foreign countries could have existed without a tariff, I answer that I think they could, but the tariff has helped them very much. There is no doubt that the object of Carnegie's work was to secure the sole control of railways, shipping, coal and iron mines, &c. The further object is to secure economies of production by continuous running. In the early days of Mr. Carnegie's progress he made a point of dumping his surplus products when trade in America was bad on this side. His instructions to his managers were to keep on selling and dispose of the surplus anyhow. He is the man who reduced dumping to a science.	510
	With regard to the facilities enjoyed by foreign competitors due to trusts, kartells, &c., we feel that with an increased home price and the cheaper export price a better average is obtained and fuller work is enjoyed.	511
Wages lost by Importation.	With regard to the amount of labour lost by the importation of iron, I may say that on the average we pay £1 12s. 6d. for salaries and wages on every ton of iron we make, from the pig iron state to the finished iron state.	512
Effect of Tariffs.	Foreign and Colonial tariffs have been detrimental to our trade. If at any time we have a surplus to dispose of we have no market to send it to. If we happen to be heavily stocked and want money, it is simply impossible for us to realise by sending to the Continent. At such times, we should be compelled to shut down. A reduction in the German tariff would not enable me to force a great quantity of our goods into Germany, but it would stop them coming to us. I do not think we could recover any command of the German market. The most I hope for is to keep the Germans at home. I should be satisfied if we could secure our own home trade, and a share of the Eastern trade where they do not manufacture. I would not expect to be able to send into Germany or into Carnegie's works; it would be like carting coals to Newcastle.	513
Wages.	On the question of cost of production, I think wages in Germany are lower than ours, otherwise I do not think they have any advantages unless by the tariff.	514
Insecurity of Capital.	Owing to insecurity of trade at home, we do not spend as much money on plant as we would. is not the same inducement in this country to go and spend money.	515
	I do not think we could possibly compete in Germany and Belgium in bar iron, even if they entirely removed their present import duties, because they are able to manufacture as cheaply as we can, and though they do not manufacture iron round Hamburg they get them from Germany or from Belgium into Hamburg about as cheaply as we could.	516
Loss of Trade in the East.	I have to a great extent lost trade in the East, in China, Japan and India. I am competing for an order for 1,500 tons of plain bar iron for Madras. I understand the price in Belgium is £4 17s. 6d., the freight is £1 less 1s., that is £5 16s. 6d. I am offered that order if I can fight the price. By getting a better home price, we might take a cheaper price for export too, and come out with a better average.	517
Continuous Working and Costs.	As I have already said, we are at the present time working nine shifts instead of eleven. By increasing our employment to eleven shifts, we should be reducing our cost by half a crown a ton. If, on going into the question, I can get a margin to live upon I will accept the order; if I cannot, I must let it go. With fair play I will hold my own with any other manufacturer. If I could get universal free trade that is what I should like.	518
Preference.	I mentioned just now that we lost an order owing to competition with the United States. There is no duty on rates to Canada. If there had been a preference it would no doubt have helped us very much towards getting the order in that case. Our trade with Canada owing to the existence of the preferential tariff has increased; so also has that with New Zealand for the same reason, and in South Africa likewise. So much is this improvement due to these preferential tariffs that I may point out, in the cases of Canada and New Zealand, we had practically lost the business. It is now giving back to us gradually. There is one point in connection with shipping rings about which I should like to complain. I think it is a most unjust thing that they should form a combine and charge us, perhaps, 10 per cent. more for our freight, which they give back to us at the end of six months, if we do not give their competitors any share of our business. It is not that they charge us any lower for confining our business with them. There is the case in point of the ——— Line. At one time we were sending iron to the Cape at 30s., and these same companies were carrying it at 10s. from America. They also are known to carry iron cheaper from Antwerp <i>via</i> London than from London direct.	519
Shipping Freights.		

Witness No. 2.

WITNESS No. 2.

I have no special knowledge of the conditions of trading in foreign countries or the Colonies against which we have to contend. 520

I believe that a tariff is necessary for the maintenance of the iron and steel industries in the face of the present foreign competition here. 521

- 522 By fair competition I mean we should be placed on equal terms. To define fair competition it seems simplest to say what I consider is unfair competition. I consider it unfair in the case of Germany and America, where they have a protected market at home, which keeps their works in full operation and enables them to produce cheaply and to send surplus produce here at prices at which, unless our works were in full operation, the goods could not be produced at home, and which we, with an unprotected market open to all the world, cannot possibly compete with here. So that fair competition involves the security of the home market. If the natural advantages of some other country were distinctly superior to any that we possessed, I would not suggest any protection. I should let the industry stand on its own fair bottom. **Fair Competition.**
- 523 In the United States, railway rates are much lower and inland water communication much cheaper than here, advantages which are to a large extent neutralised by the much greater distance which, except in the Southern States, the ore and fuel have to be conveyed. I will go into this in detail later. **Railway, River and Canal Rates.**
- 524 Water communication in France and Germany has been developed enormously, and the consequence is that goods are carried in Germany and in France at about one-seventh of a penny per ton per mile, as against the rates we have here, about 95 pence. The lowest I know of here is a half-penny per ton per mile. In the United States, and in Belgium also, there is a great deal of water carriage which is cheaper than the railway. It would be quite impossible for ore to be carried from Lake Superior to Pittsburg, if anything like the mileage rates were obtained in that country which we have here. Both the home trade and the foreign export trade are hampered by the mileage rates; the cost of production is enormously increased in consequence.
- 525 Of course, an Act of Parliament provides that railway companies shall not give a preference and shall not make lower rates for one person than for another. The lower rates of which we complain are arrived at by the granting of through rates which we have no means of analysing, and which we cannot test. To a large extent this arrangement arises from the nature of the organisation of the railway systems. In England, the system is one of private enterprise; in Germany, a system of State railways. We have in this country to contend with a railway combination. It has happened in my experience that I have been able to convince one of the companies that it would be in their interest on their railway to give me a specially low rate for goods, and the reply has always been, "We will do it if we can get the consent of the other companies." Sometimes that consent has been given; at other times it has been withheld. To take an illustration,—if one company thought it advantageous to reduce a rate on their railway, another might say: it would not help us, we shall not get the traffic, and, on the other hand, it will compete with traffic which we do get, and, therefore, we will not consent.
- 526 I am not aware of any through outward rates in this country beyond the ports.
- 527 Railway rates have been the cause of the migration of many works to the coast.
- 528 There are very few independent canals in England now. Of course, the canals have not been improved here as on the Continent; you have still a single canal boat drawn by a single horse with a lock that will only take one boat at a time. I do not agree with the suggestion that we should dry up the canals and make them railway tracks for goods traffic. The canals should be improved so that mechanical motive power could be employed.
- 529 The disadvantages we suffer in the respects I have mentioned are very great. For example, we pay to the railway and canal companies for carriage of material to make basic pig iron, for an average distance of 40 miles, 13s. per ton of pig. In Middlesbrough, the average distance is 22 miles, and the cost is 10s. per ton of pig. At Pittsburg, the average distance is 400 miles, and the cost is 15s. 8d. per ton of pig. In France, over £30,000,000 have been spent in improving the waterways, and materials are carried at one-seventh of a penny per ton per mile. In Germany, they have over 7,000 miles of inland waterways and coals are conveyed 240 miles at from 2s. to 3s. 6d. per ton, and pig iron at from 1s. 10d. to 2s. 5d. If we had anything like the same rates per ton per mile, our costs would be reduced from 50 to 75 per cent. These disadvantages ought to be met by other methods than import duties, viz., improving canals and waterways.
- 530 *In Germany and Belgium the effective wages, that is wage per ton of output, is lower. In America, the wage per man is higher, and in many cases the wage per ton is lower. The wage per ton is the real test. **Wages.**
- 531 This low wage per ton in America arises, in the first place, from improved machinery and labour-saving appliances; in the second place, from lesser interference of trade unions in America than in this country. In America it appears to me that the trade unions recognise that they have to compete with the world, and they are willing to get the best out of a man that he can produce. In this country the idea appears to be that the less a man produces the more men can be employed, and they consider that the competition is between one manufacturer and another here, rather than a competition of this country with foreign countries.
- 532 With a protected market we should equip our factories and bring them up to date. We want some definite security that the outlay will be remunerative.
- 533 The total cost of production of basic pig iron in addition to material is 8s., of which wages forms 73 per cent. The wages amount to 5s. 10d. out of a total cost of £2 6s. 1d. The wages in Germany and America would be decidedly less, in America certainly. In America the individual man earns more per week and per day, but the cost per ton of pig iron is unquestionably less than it is here.
- 534 Referring to finished iron and steel. Wages in this country were fixed at rates per ton when the production was comparatively small, and now that the output has been enormously increased by improved appliances, the tonnage rate has not been reduced in anything like the same proportion. In the United States, however, wages are at least as high as in this country, in many cases much higher; and, again, I do not think that any disadvantage which there may be in this respect should be met by import duties. I admit that the number of men employed per ton is at the present time lower, but the tonnage price is fixed. Iron producing is mostly done by contract; one man takes a mill at so much per ton, and he employs his labour. You start with a mill making 100 tons a week. If the mill makes 200 tons, and he gets the same price, he employs only a very small additional number of men, and obviously he gets very much more money. Where a mill roller 50 years ago would, perhaps, earn 10s. per day, he is now earning from £1 to £5 a day, and even more than that in some cases.

Witness No. 2
—continued.
Cost of Materials.

Dumping.

Combinations.

Effect on Prices.

Full and Half-time
Running.

I think that we can assemble all the materials—iron ore, limestone and coke—at the blast furnaces cheaper than the Americans can at Pittsburgh. I say we are prepared to hold our own against the world. There may be individual instances which form exceptions to any rule, but I would lay down the broad principle that we are prepared to stand or fall by our position, so long as we have no unfair competition.

The disadvantage, which alone requires to be met by tariff reform, is the practice which prevails, chiefly in Germany and the United States, of sending their surplus production here at less than cost. I hold that, having an assured market at home at prices which are maintained by combination, foreign works are enabled to keep at full run by sending abroad any surplus there may be at their low prices. I do not think there is any particular genius for combination in the States.

We should always have the natural healthy competition at home, which is desirable rather than otherwise. It seems to me a monstrous thing that by combination in Germany and the United States, the home prices in those countries should be kept at extravagant rates. There is not any tendency towards amalgamation in the iron and steel trade in this country. In Germany it does not necessarily take the form of combination. There is merely an agreement as to prices and output. This person is entitled to produce so many thousand tons, and that one so many, and they agree upon certain prices which they all sell at. All the works are not put under one management and control. If there was any combination in this country like the German, which would put up prices, I think it would be a very great evil. I think that the competition of the home market would tend to keep prices at something like their present level.

I do not consider a rise of price necessary, only an increase of volume is looked for. By a duty which would prevent the foreigner from using our market, we should get what we want—an increase in the volume of business without any increase of price to the consumer. We do not want to raise prices, but to produce the stuff cheaper. With an assured home market, we should, undoubtedly, have the same chance of dumping. We could send steel to Germany and to the United States. I am myself sending steel to the United States now, even with the enormous duty that there is. I am convinced that if anything like reasonable duties prevailed, we should have a considerable regular export to the States. The German and United States tariffs are already practically prohibitive.

If foreign tariffs were lower I do not think we should dump. To do this you must have a general combination like the kartell, which we are not likely ever to have in this country.

I do not agree that we should prohibit the export of coal. If we wish to employ it in this country, we must improve our industry and create a better demand for the coal, rather than by some artificial process, to prevent it from going abroad.

The difference between the cost at full work and half work, reckoning the increase in coal, pig iron and other materials, and including depreciation and all charges, I make, on the basis of my own experience :—

								£	s.	d.
Billets	..	..	..	..	..	..	..	0	15	6 per ton.
Bars	..	..	..	..	..	..	..	1	2	0 per ton.
Plates	..	..	..	..	..	..	..	1	12	0 per ton.

I went into the matter very carefully myself, and when these figures came out I examined them with great minuteness, and wherever there was any possibility of a doubt or question I reduced them, and I am prepared to stand by this statement as being certainly short of the fact.

Take a steel works, whose full capacity is 1,000 tons of plates per week at full work, the cost of ship plates is, say, £5 per ton. If only half employed, the cost would be £6 12s. per ton.

Then 1,000 tons would cost, at £5 per ton	..	..	..	..	..	..	£
Say 500 tons were sold at home at £7, that is	..	..	..	..	..	..	5,000
And 500 abroad at £4 10s.	..	..	..	..	..	..	3,500
							2,250
							£5,750
Showing a profit of	..	..	..	..	..	..	750
or 15s. a ton on the whole 1,000 tons.							
Now suppose only 500 tons is made, this, at £7 a ton, would give..	..	..	..	..	..	..	3,500
This would cost, at £6 12s. per ton	..	..	..	..	..	..	3,300
							£200
Leaving a profit of only	..	..	..	..	..	..	

showing a difference, in favour of "dumping," of £550 per week, though half the make was sold at less than cost price.

The above gives, as near as I can, the German position. As a matter of fact, they get a higher price at home, and if it be true, as one of the Commissioners suggests, that steel structural work is not much higher than it is here, I must express surprise.

German ship plates have been quoted at £7 a ton for home trade, and at £4 10s. a ton for export. All these contracts are made on the express condition that they shall not be re-imported. I have never heard of any cases of English goods being sold abroad cheaper than in England, and then re-imported and sold in competition with the English manufacturer.

I do not wish to emulate the example I have given, which consists in maintaining a high price in the home market in order to be able to dump. My theory is that we should keep the price down here.

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The practical working of the dumping process is shown by comparing the prices at which sheet bars and billets are sold here from Germany and the United States during the past three years, and the prices at the same time in the countries of origin:—

		Price in		Cost	Dumping.
		Germany.	U.S.	U.S.	
Nov. 1901.	German sheet bars.				
	d/d Port U.K. ..	81s. 3d.			
	Freight ..	9s. 6d.			
		71s. 9d.	.. 95s.	—	
Aug. 1902.	German billets.				
	d/d Works inland ..	88s. 0d.			
	Freight ..	17s. 2d.			
		70s. 10d.	.. 95s.	—	
Jan. 1903.	German sheet bars.				
	d/d Port U.K. ..	78s. 6d.			
	Freight ..	9s. 6d.			
		69s. 0d.	.. 94s.	—	
Jan. 1904.	U.S. billets.				
	d/d Works inland ..	81s. 3d.			
	Freight ..	24s. 1d.			
		57s. 2d.	.. —	92s.	78s.
Jan. 1904.	U.S. sheet bars.				
	d/d Port U.K. ..	78s. 0d.			
	Freight ..	16s. 5d.			
		61s. 7d.	.. —	96s.	—
Jan. 1904.	German billets.				
	f.o.b. Rotterdam ..	70s. 0d.			
	Freight ..	5s. 0d.			
		65s. 0d.	.. 90s.	—	

The prices given of steel delivered in the United Kingdom are actual contracts; the prices in Germany and the United States are taken from the *Iron and Coal Trades Review*. The cost price in the United States is taken from evidence. The English prices would rule higher all the way through, but lower than the price ruling in Germany for consumption there. I have in my hands an actual quotation dated March, 1904, for 100 tons steel billets at 74s. delivered f.o.b. Antwerp. I certainly could not produce them at 74s., and I do not think they could. Carriage from Antwerp would be an additional 8s. These prices are actually lower than British cost, or so near cost that the British maker would decline to take orders.

In wire rods, Germany has got the entire trade.

Similar difference exists in the German and United States prices at home and abroad of rails, sheet iron, nails, wire rods, &c., but I think it is unnecessary to trouble the Commission with details.

The most telling and fatal effect of dumping is that the liability of being swamped by foreign importations, at prices with which it is impossible to compete, checks enterprise.

Constant improvements are being made in the manufacture of iron and steel involving large outlays, but with the uncertainty which hangs over the trade here, manufacturers hesitate to spend money, whereas on the Continent and in the United States, with protected markets, a fair return is assured.

Unless this state of things is changed, the inevitable result will be that we shall become unable to compete even on equal terms. I state emphatically that, in my opinion, some fiscal provisions for meeting dumping is essential to the maintenance of the trade of this country.

I may explain the above statement further—continual changes and improvements are being made in the manufacture of steel. I know of no trade which of late years has been subject to so many changes and improvements in the mode of manufacture. All these changes involve enormous outlays. If the manufacturers in this country are unable, from the instability of their market and from the liability of being overwhelmed from the stuff being dumped upon them at prices with which neither they nor anybody else can compete, if they are deterred from making the necessary improvements from availing themselves of new inventions, and if the foreigners, by reason of their protected market and of the certain large returns which they get from their home trade, are enabled to make these outlays, they will place themselves in such a position that, even if we got a free market and a free interchange, we should be some years before we could overcome them. The production of pig iron per furnace has increased enormously since I became a maker of iron. When I first had a blast furnace it was considered a very good thing to make 100 tons a week, now we do not consider 700 sufficient; we are trying to improve upon that. Of course, in some parts, where they get richer ores, they produce much more than that, whereas we made only 100 tons a week then, now we are making 700 in one furnace, with the same number of men employed, except as regards loading and unloading materials. Moreover, we do not use half as much fuel to make a ton of iron as we did 40 years ago. There are one or two furnaces in Wales which are producing large quantities, but I do not think, as a general rule, anything so high as in America. I fear that if this state of things goes on for a considerable time longer, we never shall get on equal terms; they will attain so much superiority, and, when we are driven out of the market, our competitors would raise their prices to us.

As a broad line, subject to modification in details, I suggest that we should frame tariffs on the model of the foreigner in each case. We should take the American tariff against the American, the German tariff against the German, and so on, letting it be always understood that we were ready to consider any mutual reduction or abolition to which they would agree. I do not think that 10 per cent. would be sufficient to prevent dumping. There is a good deal to be said in favour of treating them as they treat us as a general principle. In actual detail it must be modified.

**Security for Capital
Expenditure on
Extensions.**

Suggested Tariffs.

Witness No. 2
—continued.

The volume of business in the iron industry has decreased and in steel it has increased in recent years. Similarly, profits on iron have decreased and on steel have increased. This is by combining our coal and iron business. We do not reckon a profit on coal and then another profit on iron, and on billets and on finished iron, but we take the cost all round, and give the profit on the finished article.

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Assessment for
Income Tax.

We keep all our accounts quite separate for our own information, but when we return for the income tax we return a solid amount. Basic steel by itself, without the assistance of coal, has really become more remunerative until recently. It does not apply to steel manufacture by any other process. For the country, as a whole, I should say about half and half represent the proportions as between basic and acid steel.

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1901 was a very good year; 1902 was not quite so good; 1903 was worse than 1902, and 1904 bids fair I think to be better. We cannot compete with the export trade, except in some specialities. Ours is a home trade and that has been good. The difficulty of carriage, by making it impossible for me to compete for an export trade, also acts as a protection to us, by preventing foreign goods from coming in. But the through rates from the Continent mitigate this advantage a great deal, and the inland freight does not entirely prevent the stuff from being dumped. Usually it is the cheap article that is dumped, and we have given that trade to the foreigners entirely. We keep the remunerative trade in which we do not at present suffer from foreign competition. The Germans do not at present produce the specialities we make, but there is no doubt they will in course of time. My remarks refer entirely to the steel trade. There are other trades in our district seriously affected by foreign competition.

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Tariff and Wages.

Wages per day here, as compared with America, are very much lower. I think that with a tariff we might be in a position to raise wages in consequence of being able to do better business. It is the uncertainty of a return, which accounts for the backwardness of those branches of the trade which are so badly organised. The special trades in our district are welding plates for making into tubes, round bars, some of which we are sending to America because they find ours are rounder and straighter, or have a smoother surface than they can produce.

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While I can say that our steel trade has been satisfactory, if you take the iron and steel trade generally and the manufactures which are dependent upon iron and steel, I should say, most decidedly, not satisfactory.

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Ore supplies.

The average distance from which our ores have to be conveyed is 50 miles. Neither in the United States nor in Germany are they in a better position as regards cheapness of extraction than we are. I think we are at the bottom, and there will be only exceptional cases where they would be in as advantageous a position, even in Germany or the United States. All our ore is quarried. We have got a measure which runs from 6 ft. to 8 ft. thick and is within 2 ft. of the surface. We have only 2 ft. of the surface to take off, and then 6 ft. to 8 ft. of iron ore. You could not have anything cheaper than that. The percentage of iron in this ore is very low—about 30 per cent., but then we also get 20 per cent. of lime.

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The ore mined in the United States is very much richer than ours, containing a greater percentage of iron.

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American Trusts.

I do not consider American trade to possess very much advantage in consequence of the formation of great syndicates controlling the supply of ore. A business which is so large becomes unwieldy and the management is defective. There are certain advantages no doubt, but, on the whole, I do not think there is any great advantage in combinations.

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In my case, the carriage of the ore amounts to four times the cost of getting. On the North-east coast they do not get the ore from the furnaces as cheaply as I do, but they get richer ore, and the local ores are of a superior quality. On the whole, we are clearly at a considerable advantage as against the North-east coast in respect of iron ore, and the benefits which we have enjoyed in the manufacture of basic steel would not be universally enjoyed throughout the country.

557

Coke.

In our case, our coking coal comes from a great distance; it has to be brought an average distance of over 80 miles—a feature in which, on the North-east coast, they have an advantage over us. The coal is cheaper in America than with us. I do not think they can get it as cheap in Germany. The Americans have a great advantage as regards adaptability of their workmen. Nearly all the coal in America is holed by machinery. I sent over to America and bought some American machines for holing coal, and I started them to work and they broke down every day. No machine worked more than a day. I sent an under-manager to each machine to watch it, and they worked beautifully, but as soon as the under-manager was taken away, the machines broke down again, and we had at last to give them up in despair.

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The only foreign ores which we use are the Indian manganiferous ores which we cannot get in this country.

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On the whole, in my works we use four or five tons of materials of all kinds for each ton of pig, and about 10 tons per ton of steel.

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Certainly, iron making is a declining trade all over the world. There are so many things that steel is used for that iron used to be, and steel can be produced cheaper than iron can.

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Local Rates.

With regard to local rates, I will give you a specific instance. We are in my own town, very heavily rated, and in order to assist manufactures in the town the authorities decided to have a re-assessment, which they confined to rentals over £200 a year, that is to say, they confined it entirely to works. I think our rates this year come to 10s. in the pound. Some years ago, I was connected with a firm making pig iron in Alabama, and we had four or five offers from various townships offering us free sites and freedom from local taxation for a period of from 5 to 20 years, that is the way manufactures are treated in this country as compared with America.

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Accounting.

I do not think that the systems of checking used in shops abroad, and the general methods of accounting by means of which prime cost is arrived at, are superior to the accounts that I have.

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Technical
Education.

With regard to technical education, we have made very considerable strides within the last 10 years. I think, undoubtedly, that every workman ought to have the facility of getting a high scientific education, but to force a certain amount of science on every child would be, I think, a great waste.

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WITNESS No. 3.**Witness No. 3.****565**

We produce a large quantity of pig iron and of coal, and we also own and work iron mines in Spain. In reference to the question of the profits of ironmasters, I find that of the income tax, which our firm have paid during the past five years, 36.69 per cent. was for profit on iron; 12.53 per cent. for profit on by-products from blast furnaces, and 50.78 per cent. for profit on coal and other things.

Iron and Steel Profits.

All the firms engaged in the Scotch pig iron trade, except one firm owning four blast furnaces, are likewise colliery owners.

I wish to specially call the attention of the Commission to the fact that the profits of Scottish ironmasters assessed for income tax were not all due to iron. For the purpose of the figures I have given, coal is charged to the iron works at the same price as to other consumers, the ore is charged cost price.

The manufacture of pig iron in Scotland has been a stationary trade. The make of pig iron in 1863 was 1,180,000 tons, and in 1903 it was 1,288,073 tons.

Formerly, Scotland had a very large export trade in pig iron amounting to about 66 per cent. of the make, the balance of 34 per cent. being consumed in Scotland. That export trade has been destroyed in a great measure by the imposition of foreign tariffs, and now the export trade amounts to about 25 per cent. of the make, while 75 per cent. is consumed in Scotland. Perhaps I should add that of that 66 per cent. of export trade, half was foreign and half went coastwise to ports of the United Kingdom.

Changes in Scottish Trade.**566**

Then in the same way about half of the present 25 per cent. export trade is going foreign, and half going to home ports.

The closing of foreign markets has been compensated for by an expansion of the home market. If the home market be kept non-expansive by dumping of billets and such like, the pig iron trade cannot expand.

We would hesitate to recommend any import duty upon pig iron under present circumstances, unless it be part of a general scheme for taxing all manufactures imported, or for purposes of negotiation.

Tariff.

In the event of any large import of pig iron into this country being developed either by bounties, or under the trust system of dumping, the pig iron trade should, in our opinion, be protected against such development. Meanwhile, if the iron and steel trades in general were secured against the dumping of billets, blooms and such like, the pig iron trade would take care of itself.

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Our plant is on the most modern system, and we are producing pig iron with as few units of carbon as anybody in the world. Prior to the imposition of foreign tariffs, Germany was a very large consumer. That trade is now lost. We would still do a trade with Germany if we got the import duty off; we could compete with a certain class of German pig iron.

German Trade.**568**

The average cost of making hematite pig iron in Scotland, by people who were buying their own materials, might be taken at present at £2 11s. 9d. That I should divide into ore, £1 11s. 6d.; coal, 12s. 6d.; limestone, 2s. 3d.; wages and sundries (including depreciation, amounting to about 6d. a ton), 5s. 6d.

Costs.**569**

The profit in the iron trade has been a very fluctuating profit. In 1872, 1873, and 1874, there were enormous profits made in the iron trade. Then there was a period of practically no profit made at all. The reason for producing these figures showing the percentage of our own assessed profits made in the different departments of our business was that the income tax returns have been quoted as showing the iron trade to be a very lucrative trade. We knew that a good deal of ironmaster's profit was due to coal and other things than iron. I believe those figures of percentages given will be something like a fair approximate average of the Scotch iron trade. A neighbouring ironmaster, a partner in one of our largest firms, told me that 55 per cent. of their profits, assessed in the last five years, was profit on coal. The whole of the Scottish ironmasters as a body have increased their output of coal very considerably in recent years.

Profits.**570**

With regard to the question of the advantages or disadvantages of the existence of a warrant market, I may say that I believe it is not a bad thing. It has a steady influence on trade.

Warrant Market.**571**

We use ourselves nearly 20 per cent. of our get of coal.

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On the question of the reasons for our inability to retain foreign markets, I admit that a foreign producer has advantages in many places. But take America for instance. If the duty were taken off in America we should get at America in many places all round; we should still have a very considerable trade to America. In other foreign markets, where we meet the Americans, we experience a certain amount of competition, but, as we get into the market on equal terms, we cannot complain of that. I do not think the United States compete with us in pig iron in any of our Colonial markets. They do get across to Canada. Our principal complaint is with regard to their dumping here. Dumping of pig iron has not assumed any great proportions yet, but our complaint refers more to semi-manufactured articles.

Foreign and Colonial Markets.

We make nothing but pig iron. Our products consist of about half hematite iron for steel making and half foundry iron, and a little of forge iron. Foundry iron goes all over the world.

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We used to have a large trade in foundry iron to Germany, but their import duty has killed it altogether. In the same way a large trade with America has been destroyed. We still send a good deal of iron to the Colonies where we have not met much competition yet, either from Germany or America. Competition in those markets would be experienced more in the finished article.

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With regard to the dumping of Canadian pig iron, I may say we have had several cargoes coming to this country. If that trade were to develop to any large extent—being supported by bounties—we should certainly have a complaint against it. No doubt the price was low as it must be in the case of any new article, in order that the consignor shall be able to get it on the market. I do not know that they were selling it under Canadian cost. Our complaint only would be against the over-stimulation of production there by bounty.

Canadian Dumping.**575**

The imports of Canadian pig iron to this country were 52,000 tons in 1901; 51,000 tons in 1902; and 4,000 tons in 1903. I am not quite sure of the reason for this considerable drop, but I think that in those earlier dates their own steel works were not equipped; they had to get quit of the pig iron they were making. Blast furnaces were working before they were able to consume it. I am not aware that there has been any importation of Canadian steel yet.

Witness No. 3

—continued.

**Value of
Preference.**

I believe that a substantial preference accorded to us by the Colonies would be a great advantage to us. Any preference is an advantage so far.

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There has certainly been a large increase in the consumption of pig iron in Scotland, I am referring now to the whole of Scottish trade. The increased consumption is principally in ship plates and shipbuilding material. Scotland imports a very large quantity of iron to the north of England.

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Witness No. 4.**WITNESS No. 4.****Progress and
Effect of
Dumping.**

I was one of the original founders of a company for the purpose of making steel by the Thomas and Gilchrist process from phosphoric ores. Soon after the works were built, this manufacture became profitable. From 1885 to 1899, the average annual profits were £20,000 per annum on an ordinary share capital of £250,000. In addition, we paid interest 4½ per cent. on debentures and a large sum was written off for depreciation. The principal production was semi-manufactured steel, consisting of billets, bars, blooms and rails of a value during ordinary conditions of trade from £3 15s. to £5 per ton. Our profits dropped from £30,000 in 1899, to about £2,600 in 1900. The following year, there was a loss of nearly £10,000, and it became obvious to those interested, that the cause of this sudden and alarming change in the prosperity was due to the heavy dumping of steel from Germany and America, at a price sold in this country considerably below the cost price at which the steel could be made here. There being no prospect of cessation, but rather every prospect of the increase of this dumping, the alternatives we had before us were either to wait in the hope of a change in the conditions of trade, or to put down fresh plant and get into a higher class of manufacture. This was due largely to the serious contraction of trade in America, and the larger fall of prices throughout the world which compelled us to accept orders for partially finished material which were taken to keep the works going at a price much below cost. These prices were, I have very little doubt, below the cost of our foreign competitors, and I think that is not an unreasonable opinion when I know they have assistance from their syndicates and from the State, making good any loss they may make in that way and in payment for freight, which should be added to the German cost in a comparison of this kind.

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Competition is most severe from Germany. At one time there was a considerable amount of material sent over from the United States, but by far the greatest amount was from Germany. I put in a statement, which will show how much came to the Cleveland district, both from America and from Germany in the different years of which I am now speaking.

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The alternatives we had before us were either to wait in the hope of a change in the conditions of trade or to put down fresh plant and get into a higher class of manufacture. We settled to do the latter, and by large expenditure gradually got into a different trade. We have put down fresh mills. Formerly 75 per cent. of our product was really in the form of billets and blooms and steel bars, which have been so heavily dumped. We took as little as we possibly could of the older class of business and at present we are not taking more than about 25 per cent. of our whole output. We take as little as we can, because it is a losing business; only we should lose more if we allowed our mills not to get this help to get through their quantity, but, as a matter of fact, the sooner we get rid of even that quarter we are now doing, the sooner we shall begin to make profits.

Our manufactures now consist of tram and electric rails, and consequently steel. When we had finished our plant and were able to turn out tram rails, electric rails and so on, we found that Germans had taken to competing with us in those things also, and especially the Colonies.

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Then the proceeding was this. First, we began to make rails, sheet bars, &c., then the Germans, by dumping, stopped the trade in bars, blooms and billets. We then went into the tram rails and electric rails, and they are now beginning to dump those articles; finally, we were driven into a general trade in which we also suffered from German competition. There is no part of our trade in which they are not to some extent dumping, only this is not so acute as when we were confined to the lower grade of material worth from £3 15s. to £5 per ton. It is more easy to dump the semi-manufactured article, like billets and blooms, rather than go in for general orders for which special specification for each order is required. They seem to me to dump at present about within those limits from £3 15s. to about £5 10s. a ton. If we get below £3 15s. a ton, for instance, in the form of pig iron they cannot dump pig iron except under extraordinary circumstances, because our ores and our fuel are cheap and the trade is naturally protected by the freight which is a much larger proportion of the value than in the higher grades; but when you get to a grade of a value between £3 15s. and £5, in which the wages are not very high, but only moderately high, they can then, even although their wages may be greater as in America, by the aid of their tariff, cut us out of our trade. Then again, if we get into a still higher class of trade where wages per ton are greater still, they cannot touch us—at all events at present—but I think they are bound in time to touch us seriously in these medium grades. They are beginning to compete in tram rails and electrical rails, and those higher products. We are beginning to feel it already. And it is time something was done to help us in this unfair competition.

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£3 15s. for blooms and billets is the price they have been sold at recently by America. I do not know what would be the cost of delivery from Pittsburg, it might be 15s. or £1 a ton. From my own experience I believe it to be impossible that these materials could be produced at £3 a ton. There is no doubt, however, that because of the great bulk of their production for which they secure a higher price, they are enabled to come down to that impossible price for export.

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The competition in the higher classes of work with which we are concerned has been felt especially in the Colonies, even more than in England.

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During 1900 and 1901, prices in the steel trade could not be described as low, except when compared with the prices of raw material and other items of manufacture. Fuel and wages were very high and costs rose even to £6 10s. and £7 a ton, but not in such proportion with a rise of wages and fuel as to prevent dumping being even much more effective than when lower prices were ruling. Those works, there are many in this country, not requiring to buy their fuel, made large profits on account of their having the coal, and would have made much larger profits had they been without their steel department and sold their fuel. We lost money where others who had not to buy the material were making money.

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Prices.

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I now give you the imports into the Tees in recent years. In 1900, the quantity was trifling, though low quotations were dragging down our home prices. In 1901, it rose to 21,369 tons of steel; in 1902, 36,242; in 1903, to 50,727, and for the first six months of 1904, 26,139. It would be equivalent to over 52,000 tons for 1904, if the same proportion is maintained up to October. The growth of increase during the last half year as compared with other periods is somewhat smaller, because the Germans are now asking a little higher price. They maintained their quantity and that is their chief object. The Germans do not take a lower price than they are obliged to, and if they can squeeze in at 2s. 6d. per ton less than our cost they will do it, but, if necessary, they will squeeze in at 5s. a ton less, or whatever is necessary to enable them to capture our market. I am informed that in 1901, when dumping from America first commenced, steel bars were selling at £7 10s. in this country. Americans offered a large quantity at £5 10s. a ton or 30s. below our home prices. They were then tapping the possibilities of the market. They do not now underent to such an extent, for they know all about our markets and our costs, and go in at the highest point they can just under our cost. In Germany, by the combinations in the different trades, this system is carried out with a scientific accuracy, which is designed in time to absorb our industry and occupy our markets. As long as our present fiscal system remains, dumping is quite feasible for our competitors. This secures a great advantage to them in the continuity of running of works, and we get an exactly corresponding disadvantage because we cannot run full time.

Foreign Imports.

586

With regard to the rates of duty, I should be personally averse to having very high duties. I think the idea of retaliation gives the impression that we are going to put on the same duties against other people that those people put against us. I am not in favour of that. I think that we ought to put as low a duty on as we can, compatible with the securing of our market, and I think that a tariff ought to be arranged with the view to prevent a large proportion of this material coming into our home market; not to try to make a symmetrical arrangement of percentages in our tariffs, so as to raise prices, but to aim primarily at preventing the work and employment going out of this country. I would suggest in the first place experimentally to put on an *ad valorem* tariff of, say, 10 per cent. on all manufactured goods, which we can produce cheaper than our foreign competitors can on fair and free trade all-round principles; and I think that this *ad valorem* tariff should be varied if it is experimentally proved that it is too high or too low to obtain the object sought for. I feel confident if we had free trade all round, there is no country could compete with us with any prospect of success in neutral markets, and we should be able to hold our own in the home market. The suggestion has been made that the most effectual way to secure free trade all round would be to impose a tariff on goods coming from any country equal to a tariff which that country imposes against our similar goods. I do not know that it is entirely a disadvantage to this country to have some materials coming in from abroad. I do not think our object should be to entirely stop everything. If we did that all we should have to do would be to prohibit any import coming, or put such a tariff on as would make importation, impossible; but my view is that it is an advantage to have a limited competition so that our prices may not be unduly inflated in this country. If dumping were stopped I do not think there would be much advance in prices, because the works at the present time find the greatest difficulty in keeping employed. There is sufficient competition between the various works to prevent the full amount of the tariff being put on the goods sold by our manufacturers in this country. My view is that we do not want to stop foreign competition entirely, but to stop the unfair part of that foreign competition. Under present conditions, nothing will induce me again to put a penny into a concern that was going to produce these dumped articles where our present fiscal policy is maintained. The effect will be that, if this goes on while improvements are effected in the manufacture of steel, we, not putting in another penny, would be left behind in the race. Our object, then, must be to secure the home market absolutely. I think that an import duty of 10 per cent., which would mean that they would have to submit to a further loss of 10 per cent., would succeed in this object.

Suggested Duties.

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It might be that 10 per cent. was not sufficient, but we have no experimental knowledge of the effect of a tariff. There is nobody in this country can say what proportion of the goods at present dumped would by a 10 per cent. duty be kept out of this country, and how much would be retained by our manufacturers of that which does at this present time go abroad. Nobody could say, but I think the only practical way of dealing with the question would be to put an *ad valorem* all-round duty on manufactured goods, and then watch, and scientifically alter that until we deal with the matter so as to prevent this dumping of goods into this country to such an extent as to affect the cost of our manufacture. The great evil we are labouring under is the fact that every ton of steel ordered in Germany, or in America, by our merchants is increasing the cost of all the rest of the steel we make at home. I believe, as a matter of fact, that according to the Board of Trade Returns about one-fifth of the whole of the steel that is used in this country is now brought from abroad. I think in 1892 it was about one and a quarter million tons, and the consumption of steel was only about five and a half or six million tons. If you have one-fifth of the total product of your works absolutely taken away from you, I defy you to make a profit. For instance, instead of working 12 months a year, we are working—taking the whole country—10 months in the year; one-fifth of the orders being sent abroad; and we must, as practical men, know perfectly well that we cannot cover our charges unless we have something approximating to full time. You are allowing the German to take that. The German is not only getting your market, but is reducing his cost. He is increasing your cost, and stopping you having fair play in your own market.

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With respect to Colonial markets, and the treatment of Colonial products, my view is in favour of preference. I should not object to seeing all Colonial products coming in free.

Preference.

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Arrangements with the Colonies should be, of course, a question of compromise, but I should hope to find that it resulted in favour of free trade between ourselves and them.

WITNESS No. 5.

Witness No. 5.

590

I have had a large experience in America as well as in this country. I can give evidence to the Commission, particularly on the manufacture of hematite pig iron or steel making.

State of Iron Trade.

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The volume of business in the iron and steel industries in my district has decreased very considerably in recent years. This is doubtless owing largely to foreign competition and to tariff in foreign countries where we formerly sent our products.

Witness No. 5
—continued.

Exports.	In 1883, the average exports to the United States amounted to about 40,000 tons per annum. Now they are practically nil. Our trade with the Colonies is only a small trade, but has continued about the same. Our customers in the Colonies do not appear to have put us into competition with other people at all. They are only small owners for special purposes. In Canada and Australia they are beginning to do some iron making themselves. The pig iron we send them is only for special purposes, and I doubt if they manufacture a similar quality themselves.	592
Profits.	Total net profits in our trade have diminished very considerably in recent years. The manufacture of pig iron of a special quality has become more remunerative, but the general trade has diminished decidedly. The volume of trade also has, I should say, decreased.	593
State of Employment.	Employment has fallen off considerably. I can give no figures, but I should say there are quite a number of unemployed in our districts. At the present time, they are working half time. The number of men at our works has not materially decreased, but they are working from three to four days a week; we try to divide the available work up between the men.	594
Wages.	The wages of the ordinary workman are less now than they used to be; some workmen are more skilled, possibly getting slightly more money now than they used to do. The actual character of the labour has changed very considerably. A good many labour-saving appliances are employed in which the men working them get a higher rate of wages than the ordinary labourer. I should say that wages on the whole have decreased something like 15 to 20 per cent. in recent years. The actual amount of wages received per man now is probably 50 per cent. less than what it was a year ago, because they are only working half time. The whole of the men employed by us at the present moment are working half time—four days one week, three days the next. They obtain the same rate of wages per shift. There is much less work now in the country in consequence of foreign competition in England largely, and also the increased tariff in foreign countries. On the whole, the state of trade in my district is at present most unsatisfactory.	595
Foreign Competition.	Foreign competition became oppressive with the imposition of tariffs. The Dingley Bill came in and stopped our exportation to the United States; from 40,000 tons per year it dropped down to practically nothing.	596
Iron ores and Coal.	Iron ore is obtained to the extent of five-sixths ore locally and about one-sixth from abroad. At the present moment the English ore is cheaper per unit of metallic iron than foreign ore, but if production of pig iron became larger, a greater amount of foreign ore would be used. In the United States, particularly in the Southern States, there is no comparison between the cost of working the two ores. One is for the most part mined from the outcrop, whereas the hematite ore in the Furness district occurs in pockets in which there is a considerable amount of water to be dealt with, and the cost of mining is probably three times as much for similar qualities. Really, there is no ore in the United States or Germany equal to the West coast ores.	597
	Our ores have to be conveyed an average of 20 to 30 miles, and our coking coal an average distance of 60 to 70 miles.	598
	Suitable coals are cheaper in the United States than here because the seam is easier worked, especially in the Connellsville district.	599
Railway Rates.	There are instances where railway rates are much higher here than in other countries. In England, the rate for conveying ore 25 miles will average about 28s. per ton. In Alabama, the corresponding rate is only 30 cents., or 1s. 2½d. In addition, railway companies in foreign countries give a very low rate from the works to the sea-board, in order to facilitate export, and so keep the works and their other business of assembling the materials going.	600
Technical Education.	I do not think that the system of technical and commercial training promotes the production of a superior class of workmen in foreign countries. I think our men are equally as good, and in foreign countries you find practically the whole of the better class of workmen are Englishmen, who have emigrated comparatively recently.	601
American Experience.	I was engaged in America for 14 years upon blast furnace work. The men we have are decidedly better than those I engaged in America, and yet they receive higher wages there. Not only do they work harder, but they are also more intelligent. My experience of American conditions dates to four years ago, and relates principally to the iron trade in the Southern States. There, negroes are largely employed and also convicts.	602
	If the United States reduced their tariff by one half, we could do a very large trade with them. I should say the same thing would apply to Germany, although it is difficult to compare the costs because of the inferior quality of the pig iron made there, which necessitates a more expensive conversion into steel.	603
Colonial Preference.	As far as pig iron is concerned, I do not consider that a preference would be of very much advantage to us in developing a trade in pig iron with the Colonies.	604
Dumping.	Our trade has been affected largely by loss of trade abroad and at home. The home competition is experienced principally in the form of steel billets from America, which, by taking trade out of our customers' hands, therefore took it out of ours, and also through the dumping of pig iron which has taken place during the last three or four months. We formerly had large steel works in connection with our pig iron works, which are now closed entirely because we could not make them pay.	605
	I have had some experience in organising dumping from abroad. I think I was the instrument by which the first dumping of a quantity of American pig iron was put into force in Europe. There was a large concern in the Southern States, which had accumulated some 300,000 tons of pig iron, which they had to hypothecate to the bank. They, therefore, decided to market this at some price abroad. They got low freights across both to Liverpool and to Mediterranean ports in cotton ships as "stiffening." They started with something like 50,000 tons. They sold at whatever price they could get, and in the course of seven months they succeeded in disposing of about 175,000 tons of pig iron, chiefly in Great Britain—that was in 1896 or 1897. A good deal of it was sold in Italy, but there also it was in direct competition with English pig iron. The American railways assisted us by cutting their ordinary railway rates to about one-third, and the bulk of the iron was sold at just about its cost of manufacture under the most economical conditions. The effect in Great Britain was the drop of prices and general stagnation.	606

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The result of that operation was to induce other American manufacturers to adopt dumping as a steady policy. The reduction of output injures them very much more than it does here, because there they own their own coal mines and ore mines, and they have an economical maximum amount of it. If they reduce that very considerably their cost runs up, because of the water getting into the mines and many other things. It may run up to 8s. or 10s. per ton. They therefore prefer to market a certain portion of their output at what appeared to be a loss rather than reduce it. The average price for the sale of that iron was six dollars net at works in America. The price was regulated to cut the English price, and it would have gone lower still if people had not bought.

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I agree that to stop American dumping altogether, a comparatively large duty would be required, but a small duty would tend to equalise the conditions. I attribute loss of trade to (1) existence of an American tariff, and (2) a loss of it at home through having no tariff here.

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I think hematite pig iron can be produced in England as cheap or cheaper than it can in America of equal quality. You cannot make a comparison between hematite pig iron in Germany and similar iron in this country. They make so very little of this class in that country.

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American dumping in 1897, to which I have referred, amounted to about 200,000 tons. Adding quantities dumped from other countries, I suppose there would have been some 400,000 tons dumped altogether. This amounts to only 5 per cent. of the total production, yet this comparatively small quantity had a disastrous effect upon the whole production. It did entirely disproportionate injury to the trade; it lowered prices throughout.

Effect of Dumping on Prices.

611

Comparing conditions of the iron trade in the Southern States of America, with those obtaining on the West coast of England, I should say that the labour required to produce the iron from the materials, after they are assembled on the spot, would be about 10 per cent. lower in this country. But the total cost of pig iron in the two countries would not compare because the qualities are so different. The pig iron obtained there contains an excess of phosphorous, which requires a more expensive conversion into steel. Speaking from memory, the labour cost in Alabama is about 3s. 3d. per ton, as against 2s. 9d. to 3s. on the West coast. The cost of ore containing 38 per cent. of iron there delivered is about 4s. 6d. to 5s. per ton, as against 10s. to 20s. for ore containing from 50 to 58 per cent. of iron delivered on the West coast. Fuel on the West coast runs from 15s. to 20s. per ton delivered; whereas in Alabama it will run from 8s. to 10s. per ton delivered. It should be remembered that the Alabama ore is not so good as the ores used on the West coast or that obtained from Lake Superior. The iron after it is made requires a much more expensive process to convert it into steel than the iron from either of these places. I do not think that America enjoys any natural or physical advantage as against this country in the production of pig iron; it cannot be overcome. Even where the cost of assembling materials is very much less than here, yet America, being such a large country, they have such a long way to send it that they cannot take the whole trade from us except by means of a tariff.

Comparison of British and American Conditions.

612

There is one other point to which I should like to draw the attention of the Commission as being the cause of rather unfair competition. There is one large firm in the South which employs in the manufacture of their iron some 2,000 convicts whom they lease from the State. When the iron trade becomes depressed, they cannot afford to put aside their convicts and have to put aside free labour. In order to avoid complaints from free labour, the manufacturers are anxious to export a large proportion of their product that they might be able to say that the iron manufactured by convict labour was intended for export only. These manufacturers pay the State a fixed sum, ranging from 5 to 10 dollars per month, for each able-bodied convict, in addition to their food and lodging. There are both black and white convicts, but a large proportion of them are black. One of the principal objects they had in starting dumping was that they might be in a position to say that the material produced by the labour of these convicts was exported and, therefore, did not come into competition with labour in the United States.

Convict Labour in the Southern States.

613

I think that, in consequence of the intermittent character of employment, our workmen are noticeably deteriorating in physical condition. The effect of short time is to induce loafing, a condition which they cannot easily get out of again. They are much better workmen when they work full time than half time.

Results of Intermittent Working.

WITNESS No. 6.

Witness No. 6.

614

The company of which I am chairman, have works which are equipped in the most modern style, having all labour saving appliances, which we can, under present circumstances, economically introduce.

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We manufacture rolled steel girders and all sectional material for ship, bridge, and wagon building and other structural work. Our output for 1903 was one-fourth less than our furnace and mill capacity; 80 per cent. of that output was sold for consumption in the United Kingdom, 7½ per cent. for foreign consumption and 12½ per cent. Indian and Colonial consumption.

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Our position is in every way favourable for cheap production. Apart from the factors, which I will allude to, I consider that we can produce quite as cheaply as the German or American manufacturer.

Situation and other Advantages.

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The ores we use can be assembled at our works, I think, quite as cheaply as the Lake Superior ores can be brought to Pittsburgh. The average quality of the ores used in the two places will be about the same. There is no comparison between the methods of shipping our ores with those adopted at Lake Superior; their organisation is much better and cheaper. I think there is great room for improvement in the methods of dealing with ore.

Ores.

618

The state of trade in the district in recent years has been, so far as profits are concerned, extremely depressed. I think I would be right in saying that, as regards those companies which are steel companies solely, none have been making profits in any way proportionate to the capital employed, and none have been working to their output capacity, nor employing their full complement of men. One of the largest companies has felt the depression so severely as to have been forced to shut down their steel works.

State of Trade.

Profits.

Respecting the profits of my company, I may say that for the five years, 1894 to 1898 inclusive, they were fairly good, but for the years, 1899 to 1903 inclusive (these are the years when dumping began), the average annual profit was very considerably diminished. During the last seven years we have spent a considerable sum on extensions of electrical equipment. For the last three years, work has been difficult to get and prices keenly cut. With outputs only two-thirds of capacity, costs were high and profits quite inadequate. This meant an entire stoppage of further capital expenditure on extensions and fewer men employed.

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Income Tax Returns.

Many companies in England and Scotland, which are described and returned for income tax purposes as iron or steel companies, have shown reasonable prosperity throughout, but this is to be accounted for in each case by their coupling their business of iron or steel makers with that of coal masters. It is almost axiomatic that when the coal trade is prosperous, the steel trade is depressed, and when the coal trade is depressed and abundance of cheap fuel is to be had, steel makers can produce more cheaply; so, continuing both industries tends greatly to a uniformity of profit earning, no matter what the state of either trade; and only in the event of both being simultaneously depressed do profits shew any serious fluctuations, and even then the larger resources of such companies, as are coalmasters also, enable them to keep their furnaces in blast, and tide over the dulness. I am also chairman of a colliery company, which is purely a coal producing company, and if one takes the profits on both it and our steel company, and compares it with the total capital employed, as if it were a joint concern, one sees clearly how these companies, which combine both trades, have been able to show large profits, and their income tax returns to show "iron and steel companies" as prosperous.

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I consider the income tax returns to be absolutely fallacious. The companies I have mentioned all call themselves iron and steel companies; they do not call themselves coal companies at all, so far as I know, and I have spoken to one or two of them. They never make any separate return.

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Foreign Competition.

During the life of our steel company, there has been ample construction work going on, and foreign and colonial demand, to keep us all busy at probably remunerative prices, if foreign steel had been excluded from the British market. When we started in 1891, and down to 1898, there was little or no foreign steel being introduced into our market; the only competition we had to deal with was that of those steel companies in the district, or those at a distance who were not too severely handicapped in competition by railway rates. Down to 1898, our works were fully employed, profits were good, though steel was cheaper than it has been since. That is a very remarkable fact, showing that the question of foreign competition does not tend to reduce the price of steel. We had cheaper steel when there was no competition than we have at present. From about 1898, foreign competition has been rapidly making itself felt. From the first, we were at a disadvantage in this competition, and I attribute all the depression in the trade, directly and indirectly, to this cause. Apart from the question of dumping at unnatural prices, there are other factors in increasing the cost of production in this country, which are felt by our foreign competitor to a smaller extent, or which do not affect him at all, and, therefore, render us at a disadvantage in competing with him. For instance, rates and taxes are high, which, as a fixed charge on our present output, amounts to 6d. per ton of finished steel, while the producers of our raw materials are handicapped by at least another 6d. per ton for rates and taxes, whereas the foreign importer enjoys the protection of our laws, and contributes nothing to their cost. Under the present law of rating of machinery, the more modern the equipment of one's works, and the more one scraps effete machinery to introduce new plant, the heavier is the burden of rates, as practically all our machinery falls under the definition of rateable fixtures. The foreigner has not such heavy rates in his own country, and so far as this market is concerned, he is free of all rates, and, of course, this being a fixed charge, the less we are able to produce on account of his competition, or otherwise, the heavier is the incubus of the rates per ton produced.

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Rates and Taxes.

Hours of Labour, &c.

The same remark applied to competition with the German steel maker, with this addition, that here the unions keep up the price of labour to a high level, while, in Germany, labour is not organised as in this country, and is more under control of the manufacturer, and the German has the advantage of labour saving appliances, and cheap labour at long hours; therefore, cheapening the cost of production, e.g., we employ 1,100 men and 100 boys between 14 and 18. They work in 12-hour shifts except on Saturdays, when they work about six hours. We have the advantage of labour saving appliances in this country to some extent, but not to the same extent as a new industry. In Germany, the industry is comparatively new, and, therefore, the works are new, and they have had the advantage of our experience, and our works to improve upon, and it is only in a modern work like our own, where you do see labour-saving appliances to that extent. I do not think that the German plant is superior to that which we employed in our own works; but ours is a modern work; it is quite new and up to date, and more on the same lines that the German works would be; but, taking the average of the works in this country, I think the Germans are decidedly in advance of us. In America, really everything is first-rate, because they have had large profits to deal with, and they have had no hesitation in throwing out any machinery in order to reduce cost. They have the money to do it with, and they have the security for the expenditure of the money altogether wanting in this country.

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In Germany, they are able to introduce labour saving machinery more easily into their factories; here there is yet a little resistance offered to the adoption of new things. We had a case not long ago where we thought of introducing electric charging machines to our furnaces, and I thought it was as well that we should know how the men would view the undertaking of this, and what saving it would be to us before introducing them. We found the position the men took up was this: they had no objection to the electric charging machines, but they were to get the same rates. They would not allow any workpeople to be knocked off, and they insisted that they were to be paid the same as before. No doubt, if we had put them in it would have been a question of time, and we should have been able to knock off some of the under hands, but the smelters we might have a difficulty with. They are a union, and one of the strongest in this country, and very difficult to attack. They make wages quite ridiculous and quite uncalled for for the class of labour theirs is, but we are quite powerless to attack them.

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They have no wages in America anything like so high as that paid to our leading hands. Their average labour is higher than ours. We pay ours on a tonnage rate which is very antiquated. It was fixed when the furnaces were a third or a fourth of their present capacity; but there it has remained. I think it is a fact that blast furnaces in America with their larger output, are believed, in spite of higher wages, to produce more cheaply than here, but I am not dealing with blast furnaces—I have no experience of them. I have no doubt whatever, from what I have seen in America, that the great capacity furnaces there, as compared with the toys here, must necessarily produce very much cheaper, and there is one thing, as to which I think we are very considerably behind in this, country, that is, the pig iron production, and pig iron appliances. I think we are very far behind from what I have

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seen in America, probably owing to the feeling of want of security to spend money. I know nothing of the statement which is reported to have been made by Sir Christopher Furness, that he would, at his new works, be able to turn out steel slabs at £3. There is no doubt, whatever, that labour saving appliances introduced to the extent they are in use abroad would reduce cost, but they would only mitigate the evil, not cure it. Some of the works in this country are quite up to date, and yet cannot produce at the cost that steel is sold at in this country. Neither the German nor the American can have a monopoly in labour saving appliances, nor will we. The whole question is, have we sufficient security just now to spend the money in doing it? We have just as I have told you, spent a large sum on our extensions, but if we had had the experience that we have had the last four years, we should not have done it. If we had the security of Germany, we should have no hesitation. It has been alleged that Germany enjoys advantages over Britain in respect of lower wages and more working hours per week, and that both Germany and America enjoy special advantages as regards cheap transit charges as compared with the railway rates in Britain; but, however important these differences may be—and as to that very little information is available—the dominating factor in the competition we experience from abroad is due to the advantageous fiscal conditions under which the foreigner carries on his trade as compared with those we are subject to. Then as to free market. The foreigner has the advantage of having the British market absolutely free, while his tariff prevents us enjoying a corresponding advantage in his home market, so that, if the foreigner has a good sale in our market, it cheapens production over all in reducing the incidence per ton of his fixed charges. Our market is absolutely free to him, save only for the freights he has to pay, which are negligible, being little, if anything, more than the freight and railway rates which we require to pay to many of our home markets. They are negligible as compared with the freights we have to pay. I do not mean to say that their freights are not high enough, but they are negligible compared with what we have to pay.

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I have worked out before my own works, the difference between the cost of production at its present rate of output, and at its maximum rate, and if we could produce to the full extent of our capacity, we could sell the extra quantity at 10 per cent. less than our present cost price, and should make, on the whole, an increased output twice our present profit. These figures are very startling, even to myself, when I worked them out.

Continuous Working and Costs.

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I take a still further example. If I could dispose of the whole of the maximum output of my present plant, I could sell it at my present cost price for the smaller production, and 33 per cent. more profit than at the present time of my diminished output.

I might also say that, during the last few months, German billets and slabs have been delivered in our district at about 77s. per ton, our selling price being from 85s. to 90s. per ton. I estimate, that after deducting carriage expenses, that price of 77s. allowed the German about 67s. 6d. per ton at his works—a price, I am satisfied, much below cost. Within the last few months, rolled girders were being sold f.o.b. Antwerp under £4 5s. per ton, which, with, say, 10s. to 11s. carriage expenses, made the price delivered in our home market £4 15s. 6d. per ton, against our price of £5 7s. 6d. to the same markets, or a difference of 12s. per ton. Consequently, we can at present only compete in this class of work where British steel or special tests are specified.

Dumping.

Foreign steel will not pass the special tests, so that the article we produce is a better one, and worth a higher price. At the same time, we cannot possibly test foreign dumped steel in the same way as we can test our own. We give them our furnace analysis and our furnace tests, they cannot do that with the steel dumped in this country. The material cannot be earmarked: it must be tested at the works. In the case of a large order given abroad, the engineer appoints someone on the spot to examine everything, but that is not the competition that we experience. It is the competition where a man gets 200 or 300 tons into his works, either out of store or out of part cargo of the steamer. Though the material we would supply would be better than that supplied by the foreigner, yet this foreign material is good enough for the order. To a builder, a girder is a girder, whether it is basic steel or German steel, or any other steel. We cannot produce the cheaper article since we make Siemens-Martin steel, which is all of one quality.

628

We roll nothing but standard sections, which are practically the same as the Germans. For some years we experienced casual dumping of occasional surpluses, which, though demoralising to the markets at the time, is not a very serious business; but this, and the constant cutting of prices, has recently grown to an alarming extent, and has grown to be a scientifically worked out and settled policy, in order that the dumper may keep his works constantly running at their full capacity, and so reduce fixed charges and wages bill per ton produced. Then the figures that I have worked out, and read to you a few minutes ago, exemplify that. These are, I think, very fair illustrations of how the foreign dumper works, and shows that were it not for the evil of this market being a "free coup," as we say in Scotland, for the foreigner, we could play his own game as well as he in any neutral market. But if our home market remains a free dumping ground, and the science of dumping is carried to its natural extreme, the only course open to steel makers in this country is, I fear, to shut down. Dumping, as I have already shown, has already caused one important works in our district to shut down, and has caused a sense of insecurity to capital employed in this industry, with the result that there is no evidence of any extension of works going on. Companies hitherto prosperous, can keep a certain measure of trade by enlarging their works, and thereby reducing the cost of production, but it is becoming more and more difficult to entice the requisite capital into the trade, either for that, or for introducing more labour saving appliances. My company, as I have stated, largely increased their works recently, and, speaking personally, I should be exceedingly chary of investing anything more in extensions, unless we get some measure of security against the foreign dumper.

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I do not wish, by any means, to disparage technical education, but, my opinion is, that much more has been made of this cry than is reasonable. We find no lack of technically educated men, if one is prepared to pay for their services. The only advantage a general system would be is that, increasing their numbers, would reduce the wage which we have to give. The decimal system, also, if generally introduced, would do something towards lightening clerical work, therefore reducing the clerical staff, and the fixed staff involved in their maintenance; but the more important result would be facilitating international standardization of scantlings. But I am convinced that there can be no real security for the trade, no regular and steady profits, unless we get a measure of protection, which will give us an advantage in our own market over the foreigner, even when he is selling here at natural prices. There may, in the meantime, be spasmodic bursts of prosperity at periods when foreign demand equals foreign production, but this is a state of matters which is being rendered less and less likely by the enormous extensions of steel production, both in America and in Germany. And when one considers that the steel trade is one of the fundamental trades of the country, on which hinge the prosperity of so many trades, such as machine, bridge, house, wagon, and ship building, I consider that even, if no other trades are protected save it, and those dependent on it, in view of the employment in these trades, and in view of the vital necessity of our having control of the elements necessary for naval and military construction, it is vital to the welfare of the country

Technical Education

Witness No. 6
—continued.

Security.

that the steel trade should be amply protected. The imposition of an import duty on steel would not necessarily mean any material increase of price to the consumer. With a large, and well established industry, such as ours, there would always be sufficient competition to keep prices at a reasonable level, especially as, with security for the trade, and with the increased production in supplying all the wants of our home market, there would be less average cost, and we could, in view of the prospect, of continuing to enjoy protection afford to take smaller profits per ton should the conditions of trade demand it. In my opinion, any real prosperity in the steel trade due to increased prices, and profits, would at once lead to such extensions of existing works as would effectively bring prices to a natural level. If we were making, say, 10s. per ton of profit, and had some security against foreign dumping, we would at once erect additional furnaces, particularly as our mill capacity is well ahead of our furnace capacity; but, under existing conditions, we have no inducement to do so. An important element in that, is that there would be an enormous increase in the employment of English labour. Of course, no protection that the country could give would ever do away with dull times and slack times. America has protection just now, and still she is passing through a dull time. She has just passed through a very prosperous time. There will always be ups and downs.

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Stocks.

There are practically no stocks in the stores just now. That is because the market has no confidence in the future. Formerly these works made to their full capacity, and what was not consumed was simply put into store, and they issued warrants against it.

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We have already experienced very great advantage from the standardization of sections, and it is saving us a great deal of money in making rolls. Every engineer and every architect has his own particular fad about section, and insisted on having it. Now it is quite enough to answer to them, if we simply say we can only, make standard sections, and they agree to accept those.

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I have not considered what the effect of an import duty on steel would be with respect to the practice among makers of quoting to an important tender at a price arranged between themselves. Personally, I do not see how that would affect it more than it is at present.

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Necessity for a
Tariff.

I can see no prospect of any substantial extension of the trade under present conditions, but every prospect of a serious curtailment of expenditure and labour: but should we have protection, I see no difficulty in extending the trade to supply the entire home market, and continue to supply and extend the export trade we now have in addition. If our steel trade continues to be unprofitable, or only spasmodically profitable, its efficiency will decline, and its existence as a staple industry disappear, and with it shipbuilding, engineering and bridge building. I know of no country where these industries flourish on imported materials—I think that is a very important thing to keep in view, nor can the steel trade flourish unless its allied industries are prosperous. I anticipate no danger to the consumer of the price being unduly raised under protection; we had cheaper steel when there was no fear of foreign competition. The trade is sufficiently developed to ensure all reasonable competition, and even supposing there were amalgamation of steel makers, these would probably not extend beyond the various districts, and the inter-district competition would be sufficient to keep the level of prices reasonable; besides, the remedy would always be available to the Government of reducing the tariff should prices here run too high. If the trade were really profitable, existing steel makers would enlarge their works at once, and increase their capacity and efficiency.

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Effect on Prices.

If a duty, say, of 10 per cent were placed on foreign steel brought into this country, I do not think it would raise prices here. By making a larger quantity, I have already shown that we save 5s. a ton, which is practically 10 per cent. on our make by producing a larger quantity.

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I am quite willing to take reciprocal tariff rates as an experiment. I cannot say how it would work. I start with this: that the steel trade is vital to this country, and it must be protected; I am quite willing that we should try the experiment of reciprocal tariff rates, which appeals to me as a fair thing. If America charges us not more than a rate of 25 per cent., or 33 per cent., then we charge the American steel with 33 per cent. If Germany charges us on our steel 25 per cent., then we will charge German steel 25 per cent. I think that is only a reasonable view, so far. If these countries abolished their rates, I should be quite prepared to test their material being admitted free, because there are many places in their country where our ships go to which we could carry steel cheaper than they could carry by rail from their works, and in that way we could dump down in their country as they are dumping down in ours. I do not think the imposition of this reciprocal tariff would have any effect on modifying their tariff. I think they are quite convinced that they have to protect their own industries. I only regard it as an experiment, not a policy. If it has the effect of continuing to maintain the steel industry in a healthy state, then let it go on; if it does not, then try something else, because I consider the maintenance of this industry is vital to this country. Our object should be to secure the market of this country for the steel trade. If that goes, away goes our shipbuilding, and if our shipbuilding goes, away goes our shipping with it.

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With regard to the question of raising prices, I wish it to be understood that we do not want higher prices, but more work. If we could get the production, we could make our profits out of that, and would not have to raise prices.

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I do not think it is true that the importation of cheap steel plates stimulates the British shipbuilding industry. I think it is a very narrow view to take of it. Anything that affects the steel industry of this country would at once react upon shipbuilding. No doubt, any individual ship builder is quite justified, and rightly so, in getting steel in the cheapest way he can. I am blaming the country, or the Government, that allows it to be possible for any particular maker to get foreign steel below cost price. Of course, it is advantageous for the moment for shipbuilders to be able to buy their steel from abroad at £1 a ton cheaper, but, as a policy, for the permanent prosperity of that industry—or of this country, it should not be possible that any particular ship builder should affect an established industry like ours for any little saving it might make to him. Take a ship like the "Lucania," or the "Campania." Each of those vessels, I take it, uses about 8,000 tons of steel to build them. Now each of those vessels would cost, probably, half a million. If we take 8,000 tons, supposing they had to pay 10s. more for steel than they do, it would make £4,000 extra, and that vessel is to cost half a million. Can any one in this room say that that would prevent that vessel being built?

637

WITNESS No. 7.

Witness No. 7.

- 638 I am a manufacturer of common class steel, and also some higher class steel. I also make railway materials, marine shafting, and other more perfect classes of steel.
- 639 The steel industry is not confined to ordinary common steel, but fluctuates in price from £5 up to £130 or £140 per ton. My observations in the case of common steel might appear to conflict with higher class steel. **Classes of Steel.**
- 640 I am decidedly of opinion that the conditions of manufacturing abroad are quite on a par with us. In the production of both high class and common steel our Colonies have not yet become producers of any importance. **Comparative Conditions.**
- 641 The development of the German steel productive power has increased immensely during the last eight years, much more rapidly than in the case of any other country. The principal cause of this advance is the fact that the Germans have determined to cultivate the iron and steel trades to the fullest extent, principally to find employment for both labour and capital, besides ensuring trade in every other direction. **German Development.**
- 642 The improvements mentioned are not due so much to improvements in method. They temporarily enjoy a few improvements in appliances, but the exchange of knowledge and ideas is so rapid nowadays, that we are able to take equal advantage of all improvements, which are adopted from time to time in the manufacture of steel in Germany.
- 643 In the South Wales district, where generally a common class steel is produced, several large works have been completely closed in consequence of foreign competition. The Sheffield district is living to a great extent on its goodwill and reputation for the production of high-class steels. In such cases the prices are not a material consideration, and old-established customers have not yet decided to change for foreign material. He is, in fact, prepared to pay more rather than break his connection. **Closing of Works in South Wales.**
- 644 The foreigners have not yet attempted any formidable competition in such class of steels, but they threaten to attack this trade eventually. They are now gradually going into some of these branches. Of course, the higher the class of steel, and the greater its value, the more independent do the English manufacturers become. Up to the present, this country produces the best cast steel in the world. **Foreign Competition in High-class Steels.**
- 645 I do not think there is any truth in the statement quoted from *The Times* that in many shipbuilding yards the men will work on a German forge, whereas they refuse to work on a Sheffield forging that has not been made by union labour. As a matter of fact, there is no particular union in Sheffield for making forging, therefore the difficulty could not arise.
- 646 With regard to the fluctuations of business in my trade and district, I should say that both the foreign and Colonial trades in common and high class steel are suffering more acutely every year due to foreign competition. This trade has principally drifted to Germany and America. In our own British possessions and in England, it must be remembered, that a large quantity of material is made under specification, stipulating that it should be made in England. For instance, naval work, which requires a large amount of steel, is always specified to be made in England. Railway companies, the Admiralty, Colonial Governments, all stipulate, sometimes largely, at others entirely, for English manufactures. India is the only exception. The stipulation, "made in England," goes back to the pig iron stage. A large quantity of the pig iron, which is manufactured into steel, comes from Sweden. **State of Trade.**
- 647 With regard to the interpretation of the Income Tax returns, which show that iron and steel manufacturers have been extraordinarily prosperous in the last few years, it must be remembered that in South Wales the majority of the works have derived a considerable profit from their coal. The coal has really supported them, to such an extent, that they have been able to show a profit irrespective of the loss on steel. The mistake arises through the Income Tax return not requiring the coal to be separated from the iron. **Income Tax Returns.**
- 648 The manufacture of steel articles for the railways and mining industries of South Africa, Australia and Canada has become especially less remunerative in recent years. These are the branches of our trade which are now suffering severely from competition by Germans and Americans. During the last year this competition in South Africa was more acute than at any other time.
- 649 Belgium competes severely in South Africa for light steel rails.
- 650 With regard to the question, as to whether profits have increased in proportion to volume of trade, I may say that it sometimes pays a firm to take an order with very little profit, or less than profit. Generally speaking, the mining industries of South Africa are becoming more familiar with the art of purchasing steel than they were. **Profits.**
- 651 The Germans have commenced to produce a very good drill steel, most of which, up to the present, was manufactured in Sheffield. The Americans, but not the Germans, are in the South African market now with quite as good a drill steel; in fact, Sheffield men are making it in America. **German Drill Steel.**
- 652 With regard to the amount and continuity of employment, I estimate that both the capital and productive power of labour have suffered something like 20 per cent. of their total employment. The loss I refer to is in both the home and Colonial trades. The estimate is compared with a year of maximum production. **Loss of Employment.**
- 653 With regard to the rate of earnings, I may say that the general standard rate of wages in South Wales is governed by a sliding scale, and, therefore, fluctuates accordingly. In the Sheffield district the price of labour has remained about stationary. **Wages.**
- 654 On the whole, I consider the state of trade in our district as very unsatisfactory. The principal changes came about fourteen years ago, when the production of basic steel was fully in operation in Germany. After supplying their own country with an enormous amount of material, they had a surplus which they could dump down. They have been able to supply their own country for several years past, and make a very good profit by their protective duties; and now they are extending their works so much, that they must go outside and dump their surplus produce. **German Dumping.**

The United States competition came before the German, but it was not very acute. I do not think we need be alarmed about the United States just at present.

Our principal supplies of ore are obtained from Spain, Portugal and Greece. A market for the supply of ore of a very pure grade is springing up in Sweden; Spain is, however, the most important source of supply. Spain, Portugal and Greece together, may be considered inexhaustible. These mines are, with a few exceptions, worked by British capital.

It is true that there is a slight variation in the quality of the ore imported from Spain. The reason is that they are not particular enough in picking it.

In Sweden, by the employment of a magnetic method invented by Edison, to extract the particles of iron from the ground ores, considerable development has taken place within recent years. By this method the phosphorus can be easily washed out. These Swedish deposits are quite inexhaustible. In course of time we may look to Sweden as one of the most important sources of supply; within the next fifteen or eighteen months we may obtain from 2,000 to 3,000 tons a week.

So far as the ore is concerned, I do not think either the American or the British manufacturer has any important advantage with respect to supply. It is not sufficient, at any rate, to account for the great advance of the United States.

Ore Qualities.

The best quality of American ore contains 62-63 per cent. of iron; the ordinary quality of Spanish ore contains an average of 50 per cent; the best quality of ore, Hodbarrow hematite from Cumberland, contains from 65 to 68 per cent. To produce one ton of iron it takes two tons of ore, taking 50 per cent of iron and 20 cwt. of coke, equivalent to 30 cwt. of coal.

With respect to the difference in the cost of transit from Lake Superior to Pittsburg, and from Spain to Middlesbrough, I should say the Americans have the advantage of about 5s. per ton. This is a question of ore, not of coal.

So far as price of ore to Germany, I do not consider they have any advantage over England, and I do not think they can produce pig iron any cheaper than we can. In the case of United States, there is a few shillings difference. If you possess iron, coal and limestone, and a good modern furnace, you might feel independent of any production, but it is very seldom these three elements are found together.

As to whether United States industrial corporations owning their railways, getting their materials, such as coal, carried at an extraordinarily low price, I think it is largely due to the Americans being accustomed to produce at an artificial price; it is merely a question of book-keeping. I believe we shall never know the real cost.

I attach no importance to the question of profit on mining so far as it depend on wages, depth of workings and modern machinery.

You may take it that the average freight for ore, from the Spanish port to a British works, there is from 4s. to 5s. per ton. Special steamers are built for carrying ore. In deciding this, we have to consider the question of a return freight, but then we have further to consider our docks and unloading arrangements. Taking all these items into consideration, I do not think we could employ a class of steamer equivalent to that used on Lake Superior. They have an advantage in respect of loading facilities equivalent to 6d. per ton. They claim to load a 6,000 ton steamer in an hour.

These large syndicates not only control the prices of raw material, but all concerns and railway companies requiring the material from whom they obtain their orders; consequently, they can regulate their selling price. If independent English firms controlled the railway companies of this country the competition would disappear, and extraordinary and artificial prices would be charged. This is the chief reason why the Americans possess certain advantages, but the profit is an artificial one.

We have our coking coal on the premises; in this instance, we bring our ores to the coal; our coke costs us 10s. 6d. a ton, including delivery to the furnaces. It must be remembered that north country coke used for crucible steel making is a superior article and costs double the price. The Americans, in some cases, do not want coke at all, they use hard coal in place of coke, and their blast furnaces and gas for steam producing. We have anthracite coal in South Wales, but our coal is not suitable quality.

Colonial Ores.

I have not tried Colonial iron ores beyond mere samples. It is a very important subject because of the question of return freights. I have found that Indian ores are of good quality. Canadian iron ores are also a very marketable commodity. In Australia there are some very good deposits of ore, not only of iron, but of copper, aluminium and nickel, which could be imported with advantage. It makes all the difference between profit and loss in sending a cargo of rails or other materials to our Colonies, if return freight is secured. In spite of the preference, which the Colonies have determined to give to the iron manufacturers within their dominions, there is sufficient surplus ore for this purpose. Internal transit in Australia might prove a stumbling block, but India and Canada, at any rate, have ores near the coast, which could be worked to advantage.

The difference in processes used for the manufacture of pig iron in this and other countries is, so far as the United States is concerned, due to their large deposit of hematite ores. It pays them best to produce hematite pig iron and acid steel. In Germany they have considerable deposits of phosphoric ores, mixed with what they can import very cheaply from Greece, and so on. They can naturally produce a large percentage of basic open-hearth steel. In this country we have no great advantage either way, so far as the basic steel question is concerned.

There are no very large deposits of ore in America suitable for the Bessemer basic process; it is not high enough in phosphorus; they even import phosphoric ore for mixing purposes.

Railway and Canal Rates.

In connection with the question of the relation between railway and canal rates in this and other countries, it is a little difficult to give an answer; but I should say our own railway companies are to blame to a certain extent, because of the through rates they grant. Take, for example, material coming from Cologne. The railway companies give a through rate to Sheffield; the ordinary rate from Sheffield to Grimsby is 6s. 6d. per ton; through rate from Germany will come to half price. Of course, this is simply a matter of business, but it is a disadvantage to the English manufacturer.

- 672 It is certainly a short-sighted policy for a railway company to encourage foreign trade by bringing finished goods here, whereas, if they were made in this country, they would pay much more for freight on the material, the passenger traffic of the workmen, and conveying food, etc., to the workmen employed.
- 673 A good many of the canals and waterways are controlled by railway companies, who prevent their being used for cheap communication; usually the railways guarantee a certain rate of interest upon the capital outlay of these canals.
- 674 Our trade does suffer from the policy adopted in foreign countries of granting preferential railway rates on articles exported, and the average rates for internal communication. Though the German rates are published officially, you cannot get them; the rates are constantly open to variation, and you cannot get any fixed rates. Having this policy to treat their own trade preferentially, they are open to bargain, and fixed rates do not exist. **Preferential Railway Rates.**
- 675 With regard to the question of the average burden paid by each ton of, say, steel billets from transport of works to port of shipment, I answer that this amount varies very considerably according to locality. Makers in the centre of England are handicapped to such an extent, that it is quite impossible for them to do the heavy common steel trade. An average rate would hardly be worth striking.
- 676 In consequence of the burden of railway transit, all railway manufacturers of any magnitude have transferred their works to the coast.
- 677 I do not think that railway organisation in connection with the great American steel combine has affected our trade.
- 678 Taking the whole of this country, I do not consider the plant and equipment of British works are, as a whole, as up to date as those of the United States and Germany. This is due to the Americans having made very rapid strides in recent years, and having never been burdened with much original plant, such as existed in this country. They have been compelled to introduce many improved economical labour-saving machines, whereas this country could not apply similar methods to existing machinery; consequently, we have been unable to adapt ourselves to these new conditions, but the advantage, which is slight, is only a temporary one; there is certainly some truth in the statement that a sense of insecurity with the British manufacturer prevents him from laying down new plant. We are so alarmed and disheartened at the approaching foreign competition that we fear to spend money. I do not think we can create a fictitious value for any material employed in this country; if we cannot compete with foreigners on equal lines, we had better lose the trade. I firmly believe it would be impossible to prop up old works and badly arranged plants by tariff reform. **British Plant and Equipment.**
- 679 Americans have the advantage of starting where we left off. Undoubtedly, a duty would be an encouragement to putting up new machinery. The Americans, who are a more go-ahead people, and take more risks, have been helped by such a duty. To a great extent, the large coal profits have helped them to equip the factories, and they can afford to spend sums on experiments that we cannot. It is their policy to rebuild works every ten years to meet newer conditions. A certainty of a large remunerative trade encourages him to make these improvements. The narrow margin of profits left to us in this country prevents us from undertaking similar renewals. Intermittent employment of both labour and capital is the greatest loss this country is now suffering from.
- 680 With regard to Germany, I do not think there is 5s. a ton difference between the cost of production of German and British-made steel.
- 681 With regard to the character of German workmen, I consider there is more discipline and respect among them. They are of a more plodding nature, and desire to improve the interests of their masters. The English workman fancies any advantage to the capitalist must be to his disadvantage. I do not think that the employment of the systems of old-age pensions and sick allowances in Germany carry much influence with the German workman in creating this community of interests. **Efficiency of Workmen.**
- 682 On the question of superior education, you must understand that directly the English workman has finished his day's work, his sporting instinct overcomes him, and work is forgotten for some pleasure or self-indulgence of his own. The German workman is very different; he is satisfied with some methods of education for his amusement. But I do not think that a roller or foreman require a chemistry education or to be able to play the piano. So long as he has a sound education sufficient to give him scope for amusing himself during his leisure, and to cultivate an interest in public matters, it is sufficient.
- 683 I am decidedly of opinion that conscription in Germany has done an immense amount of good for the general prosperity of the working classes. Discipline is ingrafted into the men; they obey and are more punctual and have more respect in consequence of a course of military discipline. The loss incurred by a young man in entering the army is balanced by the advantage he gets from the army education. As a matter of fact, we find young men, who have had a military training, are worth 5 per cent more in a works.
- 684 There exists in Germany organisations of unions throughout every trade; they have been in existence for many years, and are quite as powerful as in England. I do not think the German workman is superior to the British, nor is he much cheaper; but I consider that the physical condition of our workmen is deteriorating because we do not keep them fully employed. A man working three days a week is not as good as a man working six.
- 685 We have a positive advantage in our labour, if we can keep it well employed. I do not think difference in wages has anything to do with the fiscal question. It will make no difference as long as there is plenty of work, and if the Germans can beat us on fair lines, we must submit; but I do not think that is possible.
- 686 With regard to the question of the relative conditions of the different branches of the iron and steel trade, I may say that I look on the finished iron trade as a dying industry; it must gradually disappear by the substitution of mild steel. Before the invention of Bessemer steel, every article was made of wrought iron. Steel superseded this; it is made by a different process and used for a different purpose, and is a different branch of trade altogether; I prefer to confine my observations to steel. **Finished Iron Trade.**

Finance and Accounting.

On the question of British and foreign methods of finance and accounting, we all know how difficult it is to borrow money for industrial developments during depressed trade. I suppose Americans have a better method of obtaining money than we, because capital is better protected. No doubt, to a certain extent, the Americans have the advantage of having their money subscribed for by individuals like Rockefeller: but you must remember that, in forming large companies, he is a bold man who would apply to the public without first having his capital underwritten. It becomes, therefore, merely a different form of guarantee—the raising of money. These underwriters are of a similar class of people to the wealthy capitalists in America. The English capitalist is beginning to feel the insecurity of investments in this country.

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In raising money one always looks for the best advantage. In this country we are accustomed to considering debentures as the best security: in Germany, the banks are prepared to advance on securities of this character because they are better protected. They hold at present some seven-eighths of works recently erected. Every enterprising German manufacturer, with full run on the bank, takes advantage of it, and I believe the Germans have built up works a little beyond their means, but intend to keep them going by selling off their surplus in England. The banks usually charge from 5 to 6 per cent. English banks object to this class of business. There is thus no real comparison between British and foreign banks; the latter are the financiers of the commercial industry in their country.

688

Fixed Charges, &c.

From the point of view of interest on capital, fixed charges are very similar in Germany and America, as far as borrowed money is concerned for raising capital for industrial concerns. In both cases they get the money at about 5 to 6 per cent., but through different channels.

689

With regard to administrative salaries, I do not think the important men in this country are paid more than in Germany. Taking the whole of the clerical staff into account, I do not think they are very much higher here. Having had occasion to advertise for a general manager, the best man from Germany wanted £3,000 a year, and we got a man in England for £2,000; they average from £2,000 to £3,000 for general managers. In this case, the Englishman was an equally good man.

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In the drawing office you can get a good man in England for £3 a week, whereas in Germany you might get the same for £2 10s. You cannot compare the wages of an English workman with Germans working in this country, because they come here to learn English and improve themselves. Americans are paid much higher than the workmen in this country, but, on the other hand, rents and living are much higher.

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Rates.

I do not consider that in my industry the rating of machinery in England, which is "a tax," adds much on the cost of a ton of steel.

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Labour.

With regard to the question of determining prime costs, I consider that in America they have a superior method of buying their labour compared with England. They buy it by the hour, whereas we buy it by the day, and a man during the day endeavours to shorten the day's work as much as possible by doing the minimum amount of work. In America they have a system of monitors—one for every ten men—and directly a man stops work his pay stops. The wages are higher in America, but not for the output. As a matter of fact, they buy their labour on better terms and the men earn more. The adoption of piece work rates will not do away with this difficulty, because the scale of payment is regulated by a union.

693

Technical Education, &c.

Judging from experience, I think that the systems of technical and commercial education, and higher education generally in foreign countries, promote the production of a superior class of workmen. I cannot give instances of technically trained men having done better, but I can give instances of such men who will rise both in this country and in Germany. There is a very large percentage of men you may try to teach as much as you like, but who have no ambition to take advantage of your efforts. A superior class of workmen means a rather higher rate of output.

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When I said the English workman was as good as any foreign workman, I was alluding to their physical condition, and there are many thousands of men in England for whom this is the only necessary qualification. In Germany they have in some districts a larger percentage of first-class workmen than here.

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The American method of paying workmen is not adopted here because of the trade union system. They have trade unions in America, but properly controlled; nor do they adopt the same rules as here. They have also a bonus system there, but on small repeat articles only. To pay by a sliding scale, as is done in this country, is an indirect method of paying a bonus.

696

Combinations.

On the question of the causes of amalgamation in different countries, I believe that many works in Germany would not have existed without a tariff. In the case of the United States, such enormous profits have resulted from their amalgamations that there is not the slightest doubt they have gained a very considerable advantage through it. If we had a tariff here, amalgamations of sound industries might ensue for economical reasons; a tariff would not be the prime reason. Amalgamations would only succeed in improving the industries.

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I consider the American amalgamations have been designed, not only to secure control of mines, railways, ships, &c., but also to improve the cost of production, both by continuous running of works and a large scale of production.

698

Commercial Travelling, &c.

I consider that the methods of commercial travelling and consular systems abroad are superior to anything we have in this country, and all industries are better supported by the Government. American and German commercial travellers obtain more facilities when visiting a particular country, and ascertain better information through their consuls. I admit that English consuls have stirred up within the last year or two, but they are still behind the times; they are not a patch on the German and American systems of supplying information to their country. It is not the fault of the travellers, but they are simply not sufficiently helped by the consuls or the British Government.

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German and foreign firms generally are more accustomed to bribery.

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Tariff and Dumping.

As a remedy for the evils I have pointed out, I should impose a tariff on goods imported from any foreign country equal to that levied on importation into that country from Great Britain. I think this would induce them to reduce their tariffs very quickly.

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- 702 If we prevent Germans from dumping their surplus output into this country it would reduce their production, and would soon close many of their works. We should then be able to treat them as we are now being treated, because, by keeping our works fully employed, we should produce at a minimum price, as against their maximum, and so compete freely in their country. I do not mean to suggest as many tariffs as there are countries. I should group countries with duties nearly equal; I think certain scales could be easily arranged. The effect of a tariff in this country would put us in so good a position, that we could dump even into Germany. If we could only secure the home and Colonial markets, we should feel quite independent of the German market.
- 703 As for recognising German goods, say when coming from Holland or Belgium, I suppose they would have to be marked "made in Germany." We should know perfectly well that if steel goods came from Holland they could not come from that country because they do not make enough. Tariffs on German goods into this country would improve the tone of our trade all round.
- 704 What I suggest amounts to a discrimination in the ports of exactly where all the consignments came from.
- 705 The German tariff has been worked out to protect German interests, and I think the same tariff would suit the English case, because their object is—and ours must be also—to sell their labour to the best advantage, and to keep all their works running. Though that is calculated on German data, yet, speaking as an iron and steel maker, I should advocate absolute protection, and German duties will accomplish this effectually.
- 706 I see that the German tariff is worked out by Germans for Germans. Taking into account all the commercial interests existing there and the relations between the iron and steel trade, and other interests, I do not see any serious difference between our own method of manufacture and theirs, and our own scale of labour and industry and that of Germany. I should certainly prefer free trade. These observations are based upon iron and steel coming from our greatest competitors. As far as France is concerned and Sweden, I should say their competition is insignificant. It might be preferable to follow precedent, and put a general average tariff against countries that do not give us most-favoured-nation treatment, and a more liberal treatment for those that do.
- 707 The German tariff on steel billets, blues and ingots, amounts to 15s. a ton; United States tariff, £2 10s. a ton; and I should impose similar tariffs on these articles coming here from those countries. My main object is to induce them to reduce their tariff. Such an arrangement would be, I think, most acceptable to the country.
- 708 The question of the Colonies is quite different. They are the most important feature in the whole of our deliberations. **The Colonies.**
- 709 I agree that the system of differential duties between different countries could be grappled with by certificates of origin. It may not be a very admirable system, but it could be arranged. It can be done, because it has been done. If Americans tried to ship their goods into England, *via* Hamburg, they would have to pay the 15s. into Germany and another 15s. into this country, and also additional freight and dues. If they tried to obtain drawback in Germany, we should immediately know the real country of origin. We are trying to arrive at a scale of tariff which will improve our trade; I do not know whether we can anticipate correctly, but it is certain that our trade would be improved by any method which would stop dumping. **Certificates of Origin.**
- 710 I consider that the free trade policy of this country, as far as iron and steel is concerned, will ruin the trade if not altered. The tariff policy of foreign competitors promotes continuity of running and general efficiency of organisation in the industry; that is the object we hope to attain. I am not prepared to suggest any other rates of duty than those I have already explained. At the present time British works are not within 20 per cent. of their capacity. The Commission and the country at large will give the experts, and men engaged in various branches of trade, credit for ability to anticipate what they know must arise through the constant growth of large works in Germany. We cannot fail to see that these large establishments must be kept running, and that England and the Colonies must be their market. Past statistics cannot entirely regulate what must be anticipated in the future. Germany to-day and twenty years ago are two totally different things. **Results of Free Trade.**
- 711 We cannot curtail our cost of production of common steel to enable us to compete with Germany in their own country. We pay 27s. a ton for labour alone upon a ton of steel, an amount nearly equivalent to the duty imposed by Germany. **Costs.**
- 712 The exchange of scientific knowledge by means of Institutions exchanging complementary visits to their works has so equalised methods and means of production, as to place younger countries than ourselves on a par with us. **Spread of Scientific Knowledge.**
- 713 I believe that, in consequence of intermittent employment, there is a perceptible deterioration in the physical condition of our workpeople—a disposition to become indifferent, slovenly and careless, when working a short time. **Intermittent Employment**
- 714 I have found it necessary to give common labour to the artisan class in order to keep them employed; low grade workmen being forced into the workhouse when employment was short. I have, for example, found it necessary to dismiss a number of ordinary labourers and replace them by fitters, in order to keep the better men together.

WITNESS No. 8.

Witness No. 8.

- 715 I desire to give evidence on the iron and steel industry generally. I have no special knowledge of the conditions prevailing abroad, except that in most countries the manufacturers enjoy advantages, either in the way of State aid, preferential rates, or otherwise, which do not obtain in this country, and their industries have been built up behind the wall of protection. Belgium is pushing us out of the Japan market, and, together with Germany, out of Australia. **State of Trade.**

The volume of business in the iron trade has very much decreased, several works having ceased operations and been dismantled. The total value of our sales in finished iron, steel, and pig iron, has diminished nearly 14 per cent. as compared with the year 1899, owing to the imports of foreign material.

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In former years we did a very large trade with Russia, Germany, the United States, and Canada, which for some years past has been entirely lost to us. The trade has also diminished in several other directions of late years, notably in the case of China, Japan and Egypt. To China and Japan together, our sales diminished in 1903, to one-third of the value in 1899, representing rather more than one-third measured by quantity. In the case of Canada, the falling off has been very marked, probably owing to the development of her own resources. Our iron trade has decreased very considerably of late years partly owing to the invasion of our markets by the Belgians who are able to supply a cheap grade of material at a price under our own cost of production, although it should be added that steel has now displaced iron for many purposes.

717

Profits.

Our total net profits have certainly diminished recently, owing to our inability to keep plant running full time. Ruinous competition of dumped material has also been the means of our losing a great deal of business, which would otherwise have fallen into our hands. In this respect, both the iron and steel branches of our trade, particularly that of bar iron, have become decidedly less remunerative in recent years. In bar iron, the trade has diminished considerably, and in steel the trade has fluctuated greatly, owing in a great measure to the large quantities of foreign material, such as blooms, billets, sheet bars, that have been dumped here from time to time under our own cost of manufacture and the market has, consequently, been altogether demoralised. The crude material is taken away from us which is our backbone, and all that is left are the expensive sections, where we get no tonnage.

718

**State of
Employment.**

During the past few years, the amount of employment has certainly been less than formerly, particularly so last year. Our somewhat increased output during the past year, as compared with the years 1902 and 1901, was not due to any improvement in the state of trade. In fact, the selling prices have gradually declined, and our only means of keeping up our turnover has been by running our plant as fully as possible at prices to compete, as far as possible, with the foreign material, but which have left practically no margin of profit for ourselves. Wages have shown some tendency to falling off in recent years. Trade in our district has certainly been in an unsatisfactory state for the past few years, as ruling values have not allowed a profit margin, nor has it been possible, in the face of foreign competition, to secure sufficient orders to admit of our keeping our plant running anything like full time, and thus maintain a normal cost of production.

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Prices.

In the last quarter of 1900, prices began to fall rapidly, and have continued to do so with slight fluctuations, until the present time. The following figures show the extent of such fall in values from the date named. In September, 1900, bar iron realised £10 a ton; in December, 1900, it fell to £8; in March, 1901, it fell to £7 2s. 6d.; in July, 1901, to £6 10s. At the present time, it is £6 5s., and this is difficult to get. Undoubtedly, bar iron is being sold to-day under £6 5s., and there is a loss of 10s. a ton.

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The loss of Canadian trade is to some extent due to American competition, but Canada is a country so rich in the raw material that she is developing her own resources.

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**Short time and
Costs.**

Running short time in our works increases the cost of production very largely. Any English manufacturer with a proper up-to-date plant, if able to keep it continually going, would be able to compete very well with the Germans in cost; but it would be impossible to compete with the stuff he dumps here at a price which, to my own knowledge, is under cost. As regards the Americans, I am not so certain, because our raw material costs us more money and, consequently, we start on a higher basis.

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Bar iron is being superseded by basic steel to a very considerable extent. Of course, for smiths' uses and general purposes, I do not think steel will ever supersede the bar iron. There will always be a limited demand for bar iron. You cannot get blacksmiths, or any of these men where welding is required and where high tension is required—fibrous matter—to use steel. We use to-day for our pit cages and shackles and chains cable iron. We are now making special steel for horseshoes, so that, in this instance at least, wrought iron has been superseded by very mild steel.

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**Iron and Steel and
Coal Profits.**

We have collieries in addition to our iron works. In our case it is not true, as it is with most other ironworks owning coal mines, that our dividends have been earned on our coal. But I know instances where the iron and steel departments are not profitable and the coal department is making money.

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When I say that German steel is being sold under cost, I give it as the result of my experience, on which basis I am perfectly certain that it is sold under cost. I have never actually seen the cost books.

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**Continuous
Working.**

I should say that, generally speaking, British works are fully up to date. Some of our modern plants would be as much up to date as any foreign works. The disadvantages which we are under I attribute chiefly to our not running full time, and to the fact that we do not get sufficient orders of the semi-finished material, such as blooms, billets, slabs, which can be rolled by the thousand tons per week in place of hundreds of tons, only which we can roll of sections. The reason why: though our works are equally well equipped, we cannot work as full time as they, is due, I think, to the fact that their labour costs less. A German or a Belgian workman works longer than ours and for a less wage, and they do not restrict the output. To some extent that applies also to the American factories, but in that case wages are higher than ours.

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The reason why we are unable to work full time, as compared with the German, is that the Germans have a protected market at home at a high price and can afford to sell their surplus production at a much lower price than we can make it, and even than they can make it at.

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The manufacture of the crude material has now been taken up by the Germans, and the more expensive sections left to us. For instance, channels, girders, under-frames of railway wagons, and materials that have to stand a very high test, such as required by Sir Alexander Rendell and other gentlemen—Government tests, &c.—these cost us considerably more to make than the crude material. These expensive sections now bear less profit because we cannot get orders for the rougher or crude materials to help out these more expensive materials. For sectional work our specifications are of a very miscellaneous character. There may be five tons of one section, ten tons of another and twenty tons of another and so on. Consequently, our output is restricted. With billets and blooms and slabs, one gets 1,000 or 2,000 tons in one line; which enables us to get good outputs. It is in the

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billet and bloom trade that the Germans have of late been so much in evidence. We just get a decreased output and a much higher cost. I do not know that it is any advantage in producing the more expensive sections to have the cruder material dumped here. I have asked in some instances for certain steel to stand certain tests, and I have not been able to get it—not the guarantee. We do a lot of special work for the railway companies and Government departments, which have to be low in phosphorus and sulphur. They not only have a mechanical test, but they have a chemical test also, and the difficulty I have had is in getting the proper material from Germany, so that we have to make it ourselves. I suppose for the same tests, which are made to apply in Government specifications to English firms, apply also to the German. In those cases, we are not at any disadvantage with foreign manufacturers.

- 729** In 1900, the Americans were dumping sheet bars in South Wales. We had to close down for nine months, in consequence of our inability to compete against the American competition in tin bars. **Dumping.**
- 730** We pay for carriage on our ores, 4s. 10d. per ton for a distance of 80 miles. Our ironstone costs us about 19s. to 12s. per calcined ton. With a modern plant, and the introduction of mechanical appliances, I believe the cost can be reduced to 9s., which would then contain from 50 to 56 per cent. of metal. **Railway Rates.**
- 731** I consider the Americans possess considerable advantages by reason of the syndicates owning the iron and steel works controlling the supplies of ore. We, in this country, to a great extent, depend upon our ore supplies from foreign countries. I think it is a great thing if you are running your iron and steel to be able to control the ores. You thus prevent speculation, and you have your raw material on a fairer basis, and a regular one. We consume about 35 cwt. of coal for each ton of pig iron made, and the cost is 9s. 6d. per ton of coal. **American Organisation.**
- 732** With considerable capital outlay in improving our iron mining plant, it might be possible to bring down the cost of our ore to 9s., which, with delivery, would amount to 10s. 3d. I have been told the Americans get ore at considerably less than this sum delivered. We are deterred from putting in the up-to-date plant that is necessary, because of insecurity of trade. Capital has been soured in consequence of the dumping of foreign materials. **Insecurity of Trade.**
- 733** In the United States and other foreign countries, the rates for delivery of crude and finished material are much more favourable to manufacturers than in England, particularly in the case of material intended for export. Such rates, as are arranged specially for export material, assist the foreigner, to the detriment of the British manufacturer. We have heavier transport rates, both by rail and the water, than our foreign rivals. The average cost of carrying a ton of steel billets, from our works to the nearest port of shipment, is 6s.
- 734** The finished iron trade is in a far less satisfactory condition than the steel trade, owing, more or less, to the following causes:—The steel plants are of a more modern type than those producing iron, and, consequently, give greater outputs at a less cost, both as regards labour and material; therefore, are better able to withstand foreign competition than the ironworks. Steel has now displaced iron for most purposes, hence the demand for iron having decreased considerably. Ironmasters have, in many cases, allowed their works to come to a stand, not being able to work them profitably, and the fluctuations in values being so considerable, it has not been deemed advisable, in many instances, to bring the plants up to date, owing to the heavy expenditure which would thereby have been incurred. There has been a lack of confidence in bar iron seeing the low prices at which the Belgians are producing bar iron. **Finished Iron Trade.**
- 735** Our local rates in 1890 were £3,500; in 1903, they rose to £7,300. It should be mentioned, however, that our plant has been increased very considerably over this period. We now produce nearly twice as much pig iron and steel as we did formerly. Hence our rating has gone up. But the actual rate in the pound has increased by nearly 90 per cent. in the last 13 years. **Local Rates.**
- 736** I am of opinion that our method of arriving at prime cost cannot be improved upon. We make weekly yields; we take stock every month; and we produce practically a profit and loss account every month. We are able to put our finger on any leakage every week. **Accounting.**
- 737** I am a believer in technical education. I think it would make better workmen, and I think every means should be adopted to give such education. Whether the man is a collier, a steel smelter, or a fitter, he should have every opportunity of improving himself. The days of rules of thumb are past, and the greater knowledge a man has of what he is handling, the better workman he must become, and better servant. I do not think the present school system provides enough special instruction. They pay too much attention to classics and that sort of thing. **Technical Education.**
- 738** I understand that the chief reason for the amalgamations of large concerns abroad is to prevent excessive home competition and to regulate the output, so as to avoid over-production. Possibly, the shutting out of foreign competition by means of a tariff has made it easier for manufacturers to combine. That is my opinion. I am of opinion that the amalgamations have been designed to secure the control of the elements of production only as a means to promote economies of manufacture in the shape of crude materials at lowest cost, carriage of same by rail and water at cheapest possible freight, and the distribution of the finished articles in as economical a manner as possible. I consider that the existence of the amalgamation is due, not only to promote the largest possible production at the lowest possible cost, but also to prevent over-production when necessary, and also to regulate prices of both crude and finished materials, so as to prevent undue fluctuations of prices caused by speculators. **Combinations.**
- 739** Not only have foreign competitors the opportunity to flood our markets with their surplus production under cost price, but they are further assisted by bounties on export material, and also by special rates of freight arranged for material intended for export. Moreover, in the case of such surplus material, they have been known to ask (through their agents on this side)—this is to my own knowledge—for a bid for any stated quantity of the material of which they are likely to have a surplus production. I have known German agents offer me material at a price, and they have said: "We want to sell it to you; make us an offer." Then I have made an offer, and it has been accepted at many shillings less to get rid of that particular material. The obstructive effects of foreign tariffs is the shutting out of our manufactures in many cases where we could otherwise compete. Foreign tariffs, by securing the home market, enable the plants to be kept running regularly, and, therefore, tend to result in the maximum output at the minimum cost, and in the absence of any dumping of

Witness No. 8
—continued.

material under cost price by other countries, a fair price can be realised for the article produced. I consider that the free trade policy of this country is one of the conditions precedent to the success of the tariff policy of our foreign competitors, inasmuch as, if this were altered, the English home market would be secured to its own manufacturers, and thus the large quantities of material, which are now dumped here, would be unable to compete. The tariff policy of foreign competitors promotes continuity in running, by securing the home trade, and, in the absence of ruinous competition of other countries, a fair selling price can be obtained, which enables a manufacturer to increase his expenditure on his plant, and thus enable him to keep the same up to date, and, consequently, to reduce his cost of production. Of course, if we ran fully, we should naturally have more confidence in laying out large sums. As an Englishman who has an interest in steel, I simply want all nations to toe the line as steel manufacturers—by this means, I think, we should get a fair return for the money invested in steel works.

The conditions of fair competition are a matter for consideration, but the existing state of things, so far as our own trade is concerned, is anything but fair or satisfactory. If we could compete in foreign markets, without being subjected to foreign tariffs, it would, no doubt, be a step in the right direction. As regards rate of duty suggested, this is a matter for careful consideration. It would certainly be desirable to get some measure of the volume of external and internal trade, but, so far as our productions are concerned, we have no doubt that the British home trade could be considerably increased were it not for the ruinous prices at which imported material is often placed in this country. As regards the possibilities of expansion, which we take it refers to our foreign and home trade, I can only repeat that a considerable portion of our foreign trade has been taken by our foreign competitors, owing to their methods of disposing of their surplus production, their preferential rates of freight for export material, and the bounties accorded to manufacturers on such exported material. Colonial preference has enabled us in many cases to secure business which would otherwise have gone to our foreign competitors, but, in some instances, the benefits of such preferences have been nullified by the preferential rates of freight accorded to our foreign competitors, and the selling of material for export at prices under cost of manufacture. I consider that the adoption of a universal decimal system would be a considerable advantage to engineers and iron and steel manufacturers.

739 contd

Witness No. 9.

WITNESS No. 9.

I can give evidence on the manufacture of crucible steel in all its branches, files and steel wire.

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British
Disadvantages.

I should like to say, by way of preliminary, to my remarks that the greatest competition is really competition from ourselves—our people at home, and the greatest drawback we have in the trade is that neither master nor men can do as well as they used to, and the best foot is not put forward. We are at a disadvantage by reason of the extra cost of transport, duties, higher travelling expenses, and general disposition of the buyers abroad to favour home productions. This is particularly the case in Germany and France, and Russia also, to a very large extent. If you go to Germany, they will tell you that if they can buy from their home producers, they will not buy from England. You will have the same reply made in France, and the Russians have gone so far, that their Government has forbidden such works as are under Government control, and the railways, to use foreign material at all. This, of course, has only come in lately—within the last seven or ten years—but such a state of things was common in Germany—that is to say, Prussia—for a number of years. Many years ago, we supplied the arsenals of the Prussian Government in various places, till Messrs. Krupp started manufacturing our products. Then, by and by, the officials got official notice that they were not to buy any more from abroad—that they were to favour the home producer. We have higher travelling expenses for travelling abroad than the people have in their own country, quite naturally.

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State of Trade.

I should say that the volume of business in my district has not increased as much as it should have done, taking account of the expansion of business generally, and at the present time is very much on the decrease. Trade with France, Germany, Russia, Austria, Belgium and Holland, has decreased considerably, because their home productions have improved, and their Governments have helped the producers to a large extent. They have also improved their plant and machinery very largely.

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Profit.

The total net profits in our trade have diminished in recent years, and the tendency is towards further diminution. Competition being so great, profits have to be reduced from time to time; to find employment for the workmen, they have to take orders that are not remunerative.

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All the branches of my trade have dropped down considerably. Competition at home and abroad has brought down qualities in particular, and of course, if we have to supply a cheaper material, we cannot make as much profit on the cheaper goods as what we could on the higher class goods. Then, the limited liability law has also interfered very largely with trade in this country, particularly so in the town of Sheffield. You will understand that now the system of apprentices is not what it used to be—25, or 30, or 50 years ago. In limited liability companies, the directors or managing directors do not want to be bothered with engaging apprentices, and do not want to look after them either. This leads to the workmen not being up to the standard of what they were in former days.

744

State of
Employment.

The amount and continuity of employment has always varied, and I suppose will vary. There always will be fat years, and there always will be lean years, as stated in the Bible. We shall have good trade again, I think, and we shall have bad trade to follow. Good trade would seem to be a good thing for the workmen; but, generally speaking, it is a bad thing for all concerned. When you take recent years, when we were all busy, when coal, raw material and labour went up considerably in price. The outcome of that is bad workmanship; the quality of the raw material is reduced; then comes bad times again, and the workmen will not return to lower wages. That is always a great fight, and therefore it has done an immense amount of harm in the way of steady trading. All inflations are bad for business.

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All the works in our district are working short time. The average work in the steel trade is, perhaps, four days a week, but you can work six days a week, and still not work on all your plant, so that you might take it that one-fifth of the plant in the whole district is not working. Of course, I am speaking of the crucible steel business.

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- 747** The rate of wages in our districts has, in my opinion, increased by about 20 per cent. in recent years in the file trade. The wages are regulated by the union. In good times of trade, they have full statement prices. When trade is bad, some work at full statement prices; some take 10 per cent., some take 15 per cent., and some 20 per cent. less. We had some very bad years, and wages went down from the high pinnacle they were on in 1872 and 1873. Then, when 1880, 1886, to 1890, came along, trade improved, and, of course, wages also. **Wages.**
- 748** Formerly, the file grinders would not allow any machinery; the file cutters would have no machinery. Now they have come to view the machinery in a different light, so that as far as the file trade is concerned, the machinery has taken a great deal of the work formerly done by hand.
- 749** I should imagine that in Germany wages have increased rather more than they have in Sheffield, or in England, because they were so very low; but when you come to Sweden, which is now also a competitor in this country, I do not think that wages have increased in anything like the proportion they have increased in England or elsewhere. Wages have increased in Russia too, but not to any appreciable extent.
- 750** The Germans are not competing much in special steel in this country. They have such a large market at home, and there is so much room for them yet, that they have not had to come here. They still allow us a monopoly in certain things, because they have better work, and we are welcome to such as we get. I do not think the Germans can compete in this trade, because in the special crucible steel trade, Sheffield has natural advantages which I believe no other town in the world possesses. It is easier in Sheffield to start the manufacture of crucible steel than it is anywhere else in the world. You have everything at hand. You can hire a furnace. You do want not much capital. You find the workmen there. You find the material—all that you want—and you find a market. **Foreign Competition.**
- 751** Foreign competition, as far as our trade is concerned, is very keen from Sweden. They come in with their materials, which are of a very good quality, and they have the wages very low, so that they can produce manufactured goods at half the price that we could in Sheffield.
- 752** My remarks apply equally well to the wire trade. I know all the branches of the crucible wire trade, that is, the better class of wire used in manufactures. It is a material whose price varies between very wide limits, from 4d. to 10s. a pound, according to sizes and quality. I can make steel from 3d. to 1s. 9d. a pound, with qualities varying by 1d. per pound.
- 753** Home competition, as well as foreign competition, in drill steel, is very severe. If there were more work in the country, it would no doubt help to some extent to reduce the severity of this competition, but there are always people who go into business that have no business ability, and those are the people that ruin prices, and ruin the reputation of the country. For instance. We have a number of steady working men in Sheffield who save money in their business as workmen. When they have saved £100, or £200, or £300, they go into business on their own account. These men are workmen that understand how to make a thing, but they do not understand how to sell it. Sheffield has produced hundreds of that kind; they are what are known as "little masters." **Home Competition.**
- 754** If a tariff were placed on crucible steel manufactures coming into this country, internal competition is such, that prices would not rise in that kind of business. Home competition would be sufficient to keep prices down. **Effect of Duties on Prices.**
- 755** I believe that Sheffield houses could supply drill steel to South Africa as good and as cheap as the Germans, but it is done at a very low price, and it is not worth freight, carriage and duty. The common class of fencing wire and wire nails is also in the hands of the Germans. We take most of our supplies from Sweden for the crucible steel. The Swedish material is the only proper and good material. You may say that nine-tenths of the material used in Sheffield for crucible steel is obtained from Sweden. Some comes from Russia, and from Austria.
- 756** In Sweden, wages are very low indeed, and more economical management and lower general expenses ought to be found for those countries.
- 757** The average freightage rates on charcoal hammered bars from Sweden into Sheffield is about 12s. per ton.
- 758** I think it would be a mistake to put a duty on imported bars for use in the manufacture of files, because these cannot be produced in this country. We have not got the suitable ores, nor have we got the charcoal necessary for the production of such iron.
- 759** The question of rebate or drawback on manufactured articles, exported on account of duties paid on materials imported and employed in the manufacture of these articles is, I consider, a very difficult one. It is a very difficult one in other countries, and there is a great deal of underhand work going on through it. They have such a thing in France. The people that export machinery, say locomotives, and various other things, get an *aquit a caution*, that is to say, get a drawback on large quantities of raw material, which they say they buy from abroad for the manufacture, and these drawback papers, or *aquit a caution*, are publicly sold in Paris. The people buy them, and have to pay a certain price, and it enables your competitor sometimes, who has an agent who is sharp enough to get these, to undersell you altogether. I do not think I should imitate that custom. **Rebates and Drawbacks.**
- 760** When you have a steel for which you pay, as raw material, £20 to £25, and you sell it in the manufactured form at £30, it does not enter so much, but when you buy your raw material at £9, and have to sell the finished at £25, it would make a difference if you had £1 duty to pay.
- 761** The Germans and the French purchase at the same price as we are purchasing from Sweden and pay a high duty. The Germans pay little duty, but the French have a very high duty, and some of the French manufacturers say it is wrong; that their fiscal policy is wrong; that it does not give them a chance of competing, even in their own country. The Frenchman is unable to compete with a Sheffield manufacturer of crucible steel, they cannot make as good an article as we can in Sheffield. They probably get the steel from Sheffield and make the band saws which come back again. There was a time when they were better in band saws, but in a neutral

Witness No. 9
—continued.

market, say Russia, where they can get in on the same terms as we do, I think that we alone supply more band saws in Russia than the whole of the French combined, and we have to get them made in Sheffield; but in wood-working sawing machinery the French are very clever, and ahead of us.

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Loss of Wages.

In the case of high-class steel, the loss in wages per ton of imported steel is very considerable. I have just taken an average in my works to see how much fuel we use per annum. To melt a ton of steel, it requires three tons of coke to do it with, and to finish that steel out of the ingot into bars, it will take again, before it is finished, three tons of coal, so that you make take an average of six tons of fuel to one ton of steel. The wages are also very important, because it is all labour from beginning to end, and finds a great deal of employment for skilled workmen. On a ton of steel at £60, the cost of materials, labour and fuel, would come to about £45. It is very difficult to strike an average. Through the trade, it might average from £15 to £20 per ton for labour alone. I do not think the quantity of crucible steel imported is large and of late years America has sent more than Germany.

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Continuous Running.

As to the difference in cost between full and partial running of works, it can easily be understood that, if one-fifth or one-fourth of our works is not employed, our general expenses, such as salaries and rates and taxes are exactly the same. Now, if we produce, as we are doing, one-third less than what we did in the best times, we have still that heavy charge, and it brings our profit down. Again, if a man works four days a week, he is not so good a workman as when he works six days a week, and if your plant and machinery goes on night and day, there is a saving of fuel, and a saving all round, so that the system which is employed in America and in Germany to sell below cost for the sake of keeping plant and machinery going is not such a bad one.

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Foreign Export Systems.

The reason why the British manufacturer cannot follow the German and American systems of organising their export trade is easily explained. If I were to double my plant to-morrow, where should I find the demand for it, or the sale for my products? They have a closed market. The Germans have 50 to 60 million people themselves; the Americans have 70 millions and the Americans are individually very large consumers. If you take China, with 300 millions, they do not consume anything like so much as the German 50 millions will do. The German and American tariffs have, therefore, been of great advantage to them. When you get such an extraordinary tariff as the Americans have, somebody must suffer, but, on the whole, I believe it is a good thing. I have known Germany for 50 years, and I believe that that country has advanced three times as fast as we have. Similarly, in America their prosperity is far in excess of this country, so that their policy cannot be called a bad one.

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Foreign Progress.

Not all the fall in prices is due to domestic competition. The export organisation of Germany and America, leading to the selling abroad below cost, undoubtedly brings prices down, but in my special article, more so than in anything else, neither America nor Germany, can or does produce the high qualities of crucible steel that are produced in Sheffield.

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The American Tariff.

The American tariff immensely assisted them in building up their organisation. They have a closed market amongst 60 or 70 million people, and people that are all consumers. It is not like Africa, nor are the people like the Kaffirs who go without clothes. If American tariffs were reduced, it might help us to recover a great deal of the trade we have lost in America.

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In the case of the heavy iron and steel trade, the export price is no doubt higher than the home price; this practice is not adopted in the crucible steel trade to any extent.

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Education.

I do not think that education in England has raised the standard of workmen with respect to his willingness to do his duty. Our education has not been in the right direction. The educational machinery may be good, but the men who drive the machinery are not the proper men to teach what should be taught.

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Foreign Railway Rates.

With regard to foreign railway rates, I have no definite figures, but we could supply steel in bundles, delivered in Paris, at the same rate as we can deliver to the South of London. This shows that their carriage must be considerably less than ours, both on land and sea. Steel billets cost from 6s. 6d. to 8s. per ton for freightage from Hull to Sheffield, and 5s. a ton for pig iron.

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Colonial Ores.

I believe that there are splendid iron ores in Canada and Australia which could be employed if there was proper organisation.

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Finance and Accounting.

I do not think that there is anything in the methods for raising capital adopted in America, which would help business in this country. I do not think it is more difficult to raise capital for industrial purposes in this country than it is in America. The tariff might facilitate the process of raising money for new enterprises. A great deal depends, when a man wants to borrow money, on the ability, reputation and integrity of the man. In Germany, banking facilities are not so antiquated as they are in this country, and bankers are always willing to lend against a good security. In Germany, banks finance a great many of the industrial companies of Germany to an extent which would never be dreamed of by English banks. They hold the shares of many industrial concerns, but I do not think it is a good thing for too great facilities to borrow money.

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Administration Charges.

The administration charges are, I think, considerably heavier in this country than in Germany and France—this is largely due to the fact that a great number of the works in those countries are not in large towns. Hence rates and taxes are not nearly so high, and the management is always considerably less expensive than in town. The effect of these heavy burdens, in the more densely populated districts, is naturally to drive the manufacturers away from the big towns into the country, but when you have got a large plant put up in the town, which was originally on the edge of the town, you cannot move so easily. New factories are being erected in more rural places owing largely to heavy rates and charges.

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Technical Education.

As to the system of technical education and commercial training, and higher education, I do not think there is as much in it as many people wish you to believe. The great trouble is that there is not as much desire in our people to improve themselves as in Germany and America. You cannot convince the people that it is to their interest to do the best they can, and to be as economical as possible in fuel and other matters. There is an enormous waste of fuel in Sheffield, due entirely to indifference.

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774 The foreigner is more apt to learn and has the desire to do so. You must not forget that, 40 years ago, England was held up as the model country of the world for manufacture, and that was bred and born into the people, and they all had an idea to go to England to see what was done in England and to improve. That was notably so as to steel, iron, cotton and other goods. Now hundreds and thousands of men have come to Sheffield, stayed in Sheffield for a year or so, worked as practical workmen and gone home again with the information they gathered and started working.

775 As to the rates of duty suggested, I think that we should never put a very heavy duty on anything, and we should put no duty on raw material, which we must have in this country for manufacturing our goods. A moderate duty might be put on manufactured goods, notably those of which labour forms, perhaps, 80 or 90 per cent. It is a fact that if you have people it is far better to give them employment than to keep them in the workhouse. If you keep them in the workhouse, you have to pay for them, and they deteriorate. Therefore, it is the duty of the Government, or the people who govern the country, to try to find as much employment as possible for the people. **Rates of Duty.**

776 Such duties might raise prices to some little extent, but we want to have them moderate simply as a revenue, and not so much as a protection. We must teach our people we really do not need great protection; what we need is improvement among ourselves: to be economical in energy, in fuel, and in general expenses.

777 The duties I suggest will not promote these objects, but I suggest duties for revenue. You must have protection somehow. Supposing you yourself were a landed proprietor and had 10,000 acres of land, and half-a-dozen of your neighbours around you also had 10,000 acres of land; your neighbours had a fence round everything, and you had no fence, what would be the result? They would make yours a common tipping ground very quickly. We want protection in moderate form, because if we have the power, we can go to Russia to ask Russia to meet us, and not impose such extraordinary duties, and we can say, if you do not meet us, we shall not buy your goods, notably your corn. What would be the result? If the farmer does not sell his corn, he cannot pay his taxes. If he does not sell his corn, the railway cannot carry it. The Government guarantees most of the railway debenture interest. Then, first of all, the Government would have no taxes from the farmer, and they would have to pay the debenture interest.

778 I am in favour of no duty on raw material, under which head I also include food. But when there was a duty of 1s. a quarter on corn it made no difference, and if there had been 2s. it would have made no difference. Would it not be better for a man to have six days a week and full wages than four days a week and short wages? I should, therefore, be in favour of placing a tax on imported food products, if it would help to bring other countries down, and reduce the tariff against us.

WITNESS No. 10.

Witness No. 10.

779 I wish to give evidence particularly on the difference between the organisation in this country and America. My Company manufactures corrugated boiler furnaces, pressed steel wagons, and steel boiler plates. I have some knowledge of the firms making similar goods on the Continent and America. On the question of the cost of extraction in the United States of America, I know that owing to the mines being largely surface mines, and the ore lifted by steam shovels, the cost amounts to 5 cents. per ton for labour. The ores in this country are not so rich in metallic iron, and cannot be delivered at blast furnaces in Cumberland at less than 16s. to 18s. per ton, depending on the proximity of the mines. Wages are a material factor. The United States, being mainly surface mines, the ore is easier to work, and, as before, mentioned, is practically all handled by machinery from being lifted from mother earth to being charged into the steel furnaces. Cumberland mines are all deep mines. American ore is about 15 per cent. richer in iron than our general Cumberland ore. **American Conditions.**

780 With respect to the advantages accruing to American manufacturers because of the formation of syndicates in their country. I believe that as the syndicates are largely controlled by consumers of ore, they naturally have the distinct advantage in having command of it; they are able to place their competitors at a disadvantage by raising the price of ore against them. Since they obtain their supply at practically bed-rock cost, it will give them the advantage over competitors in foreign countries who are unable to obtain their ore on such advantageous terms. In Germany, the cost of coal is somewhat higher than our own, which at the present time averages about 11s. per ton. In the United States of America it is lower. In Pittsburg, during the month of February of the present year, the price was about 7s. They are using a soft bituminous coal; we use a better and harder quality. As to the effect on our trade, in consequence of the existing preferential rates in foreign countries, I have to say that, in the United States of America export goods of our manufacture are carried 440 miles for 9½ cents. per 100 lbs. against a charge of 12 cents. per 100 lbs. for home traffic. These are equivalent to 8s. 10½d. and 11s. 2½d. per English ton respectively. Compare these rates with the present rates from London to Glasgow. For furnaces the rate is 30s. for one ton, 23s. 4d. per ton for a two-ton lot, and 19s. 7d. for a four-ton lot. Plates are 30s., 17s. 6d. and 15s. for similar quantities. The haulage in this case is only 208 miles. The haulage in this case is only 208 miles. The London rate for a haulage of 196 miles is 25s., 17s. 6d. and 16s. 8d. The rate to Hull for our goods is 5s. per ton, to Middlesbrough 6s. per ton. With regard to the question of return freights, I have to say that large deposits of magnetic ore are to be found in the Drakenberg range in South Africa, but, as at the present time labour cannot be found to work the gold and diamond mines, no attention can be given to mining iron ore. If it could be worked, however, the ore would have to be carried over a distance of 6,000 miles, and the rate of freight would necessarily be against it, unless it could be carried as ballast, or by specially constructed boats. The question of the present system of water ballasting of vessels enters very largely into this, as it is customary for boats to fill their ballast tanks with fresh water when starting, to be used to feed their boilers, and replace the same with sea water as they go along, and the boat that carries fine goods would not at the same time carry dirty material like iron ore. If such a trade could be developed, it would certainly favour business between these Colonies and the Mother Country. The ore when delivered here would have to compete with Cumberland and Spanish ore, which at the present time is offered at 25s. 6d. delivered to users' works. On the question of the difference of processes for the manufacture of steel employed in different countries, I may say that the invention of the basic process enables makers to use highly phosphoretic ores, the slag from which is saleable as a valuable manure. Further, on the question of differences **Syndicates.** **Cost of Coal.** **Freights.** **Processes, &c.**

Witness No. 10
—continued.

in methods of the financing of industrial concerns, I believe that debentures having security of the whole concern is the cheapest way of raising a loan, and as it concerns shareholders only, it is the best system for those carrying on the business, in my opinion. It is generally assumed that administration charges as compared with this country are lower on the Continent, though not always so in America.

780 *contd.*

Reasons for U.S.A. Amalgamation.

The reason for amalgamation, primarily, in my opinion, was to obtain control of the home market, and to keep up prices, as well as to secure the elements of production, and incidentally this would tend to promote economy of production, both by continuity and the increased volume that could be dealt with. The effects of trusts, kartels, &c., are to secure their home trade, and at the same time, from the profits they thus make by being able to keep up prices, they are enabled to give a bounty on exported articles, because as they are put through with their home orders, the cost of production is thereby lessened.

781

Foreign Tariffs.

With regard to the effect of foreign tariffs securing the home markets, I may say that with regard to our own business of wagon-making, taking America for instance, the long haulage, owing to the size of the country, and as a corollary to that, the greatly increased mileage, makes the stock of wagons and locomotives immensely greater than in this country, and at least 10 per cent. requires replacement annually from ordinary wear and tear. Orders given out in America are very much larger than in this country; orders for 1,000 wagons are unknown here, but would be considered a small order in America, and I have heard of one Company in Pennsylvania who gave out two orders for 6,000 wagons each in one year. Under these conditions, with the enormous number of articles of one pattern required, organisation can be based on an expert being in charge of every department, and every section of each department, and in consequence efficiency is increased by the fact that each individual can concentrate his energy in one direction only. In this country we are obliged to put an expert in charge of several sections, and organisations suffer from that reason.

782

Organisation of Works.

With regard to organisation of works in this country and America, I find that we have both struck, unknown to each other, the same basis. But in their case they have a much larger staff, and, as I have stated, they can put an expert in charge of each section. I do not think that there is anything in favour of the American system. The forms, although slightly different, come exactly to the same thing in the end. With regard to the American works, I do not think they have anything to teach us. But, as I said just now, they get tremendous orders, which is a big advantage. In fact, in those works—of course, a great deal of it is hydraulic pressing—they were working hydraulic presses; alongside, was a steam engine, working a punch and shears; next to that was another machine, worked electrically; next to that was another one, working by compressed air, and so on. So they had little steam engines where they thought they would be needed; they had compressed air where it suited them, and they had water where it suited them, and electricity. They were not confined to any one thing. They used a tremendous lot of pneumatic tools.

783

784

Materials.

I am not prepared to say that our material is as cheap as in foreign countries, because, as a matter of fact, we make our own steel, and pay a high price for our pig iron, in order that it shall be of a special quality.

785

Corrugated Furnaces.

I am familiar with the new method of producing corrugated furnaces in Germany made of weldless steel, but, however cheap the method may be, if you take the price of steel and labour it will not meet the price at which they are selling.

786

American Advantages.

The American manufacturer has also the advantage of large orders, which enables him to organise his works better. He has an advantage also in his freight, which is cheaper. I have given you a case. We have to pay for half the distance in nearly double the price. That is what it comes down to. He can also get cheaper material. I attach an enormous importance to the bigness of orders. So far as the men go, they are using in America a cheap class of men chiefly Hungarians. They mix them, they get about five nationalities in certain proportions to prevent strikes, but the output per man we compare favourably with.

787

Imperial Trade. Preference, &c.

It comes to this, therefore, anything that would develop trade within the Empire—trade with the Colonies, that is—would increase the home orders, and would be a distinct advantage to our works. We have never got an order for 1,000 wagons. This month they had two orders, one for 1,400 wagons, and one for 1,000 wagons, which they describe as "some small orders."

788

The following report from the Saxony Machine Works is somewhat relevant to the point now under discussion:—

789

"In order to keep up our Locomotive Branch, and, maintain our staff of employees therein, we were compelled to seek for orders in distant markets new to us, and to obtain such orders, we were forced to accept prices which show losses instead of profits."

With regard to the South African preferential tariff, there is no doubt that, even with the preference, the Americans, to get into the market, offered to take a less price than ours. But then an English Company offered to do the same on certain terms. They wanted the money beforehand, and they offered under those terms. That kind of competition will come in in this country as well as from the foreigner. These people I am referring to were practically, to put it bluntly, hard up, and they said that, if they were paid in advance, they would undertake the order at a considerable reduction on our price. Well, they did not get the order. The Americans were not hard up, but they really undertook to take the order at less than our price, although the preference was in our favour.

790

On the question of Canadian preference, I may say that a little while since we did some business with the Canadians, and that preference undoubtedly helped us. We exported furnaces to Canada through the preferential tariff. We are not doing so now, but the only reason for which we stopped it had nothing whatever to do with the preference. The preference did enable us, and would enable us now, to compete in Canada with the Americans easily. As a general rule, our finish is very much better than the American finish, and we take orders at higher prices on account of that.

791

Board of Trade Requirements.

The Board of Trade requirements do not permit us to use basic steel for the manufacture of corrugated furnaces. We would not use basic steel even if we had the chance. These very cheap tenders that I have spoken of are cases where basic steel has been used, and is one reason why we have been unable to compete, and the tariff would hardly meet that difficulty.

792

Evidence of Witnesses appointed on behalf of the British Tube Trade Association (English Section).

WITNESS No. 11.

Witness No. 11.

FIRST (TUBE TRADE) WITNESS—

793

We represent the English section of the British Tube Association, comprising the whole of the English tube manufacturers. When the question of tariff reform was brought before the English section, a Committee was unanimously appointed to formulate evidence to be laid before the Tariff Commission.

794

Taking the last 10 years, I do not think that more than two and a-half or three years have been really good in the two principal features, namely, in the largeness of the demand, and the remunerative character of the prices. Unfortunately, the conditions of our trade are now controlled by the state of the trade in Germany and America, as directly their home demand falls off, we get our market flooded with their surplus production and our selling prices are immediately ruined. As long, however, as they are fully employed with their home and local trade, we are left alone and a period of full and profitable employment ensues. These periods, however, appear to be getting fewer, inasmuch as both the countries mentioned have largely, by the help of our free market, extended their works and production, and their outputs are now becoming so large that we feel we shall always have a dumped surplus, large or great, as the case may be, to contend against.

State of Trade.

795

The principal form of foreign competition consists in dumping down their surplus make at a price which only gives a small proportion of charges over labour and material. These dumping prices are not confined to our own free market, but, from time to time and according to circumstances, are met with in all the markets of the world. Both Germany and America, however, seem to dump scientifically, as they principally attack those markets with which they have the best means of communication: thus America chiefly attacks the Canadian market, and Germany, Switzerland and the countries of Europe immediately surrounding them. Whether the trend of public opinion has had any effect I do not know, but I have lately heard of the Germans sending tubes over to this country in a partly finished state, the finishing process being put upon them here, and in that way endeavouring to create an impression that the goods which they supply are of British manufacture. There is a point that I should like to mention, and that is, that frequently foreign goods of an inferior quality are accepted in competition with ours, which are not subjected to the same tests as English ones are, nor are the foreign manufacturers put under the same restrictions as to the price of labour, hours of working, &c., as the English manufacturers are, nor do they have to contribute in any way to the ordinary revenue of the country.

Dumping.

796

No figures are available showing the actual imports of foreign tubes into this country. We have, however, figures showing the quantities exported to Great Britain from Germany and the United States, and these we have analysed with the following result:—

Statistics of Tube Trade.

During the four years 1899, 1900, 1901 and 1902, the two countries named exported to this country finished tubes to the value of nearly one million pounds sterling, which represents an average yearly figure of £250,000. It will be readily seen the vast amount of harm, which such wholesale dumping does to British tube manufacturers. With regard to 1903, we have not been able to obtain a complete set of figures, but can say from experience that foreign competition in that year was far worse than in any of the four years mentioned. The quantities of American and German tubes imported into this country are nearly equal to the whole of our exports to the foreign countries of the world other than British Colonies, and it must be remembered that America and Germany take little or nothing from us in return. The following figures show the comparison:—

Year.	Imports into England of American and German tubes.		Exports of British tubes to the foreign markets of the world except British Colonies.	
1899	..	25,000	..	33,213
1900	..	25,000	..	28,603
1901	..	25,000	..	23,203
1902	..	25,000	..	25,528
		100,000		107,947

In the four years named, we exported to Germany and America, 4,645 tons, out of the above, so that we should be quite prepared to sacrifice this if we could preserve the 100,000 tons they sent in to us over the same period. It only remains to say that the 25,000 tons per annum would keep five works of average capacity and 2,000 men fully employed, but in the production from raw material would mean the full employment of 4,000 men.

797

A sufficient supply of material for the manufacture of tubes can be obtained in this country without difficulty, but while most of the tube strip used has hitherto been of British manufacture, there has been a larger and growing importation of foreign steel strip, which has been dumped down here. The Americans make all their tubes from soft steel strip, but the Germans make both iron and German steel strip as desired. The works manufacturing strip, both in America and Germany, are, as a rule, much larger and more modern than our English works, and have undoubtedly grown into a position, mainly through their protected trade, and with the help of our free market, which enables them to produce strip at a much less price than we can purchase it here. There is no doubt, however, that if our home trade were preserved to English manufacturers, modern works and plants would be cut down, and the tube trade would have the advantage very soon of much cheaper material. As regards geographical position, the British tube trade is mainly concentrated in two centres, namely, in Birmingham and South Staffordshire district, and in and about Glasgow. The former district is well situated for dealing with the home trade of this country, and the Scotch works are able to place their goods f.o.b. at a very small cost. Take it altogether, the works could not be better placed either to defend our home trade or to reach the foreign markets.

Materials.

**Effect of
Foreign Tariffs.**

The effect of foreign tariffs has been first to keep us out of the markets of the countries so protected, and thus to encourage the development of their own industries to meet their own requirements on demand. Secondly, to enable these developed industries to compete more favourably in the markets of the world.

Foreign tariffs have materially reduced our exports of tubes to protected countries. The figures we submit cover a period of 29 years from 1874 to 1902 inclusive, and it will be noticed therefrom that America and Germany have practically closed their doors to us, and it is a fact that to-day we can only send there a few articles of special character or design. The most serious fall is in our exports to Germany, which have declined from 4,706 in 1874 to 442 tons in 1902, or to just under 10 per cent. of what they were in the earlier year. A serious decrease will also be noticed in our exports to Russia, Holland, Belgium, France and Italy.

If there were free trade with Germany, we should most certainly be able to obtain a footing in their market. Germany and America are gradually gaining control of the markets of the world. In order to show this, we exclude British Colonies. The markets of the world have expanded enormously since 1874, and their demands now are approximately five times what they then were. As the figures submitted show that our exports have remained practically stationary during the last 29 years, it follows that Germany and America must have captured the whole of the expansion of trade. The chart (handed in), showing how the Continental trade has been captured by the Germans, may be used as part proof of this contention. Unfortunately, it has only been possible to obtain a complete record with regard to Germany since 1883, while for the United States no records are available. In the year 1883, the total German exports to all countries amounted to 19,500 tons, and these, except for slight fluctuations, have steadily grown to 55,000 tons, or more than twice our own total exports to the same places. Also on the other hand, British exports to foreign countries have remained stationary. The figures, which we have collected, I think, will be found to show the exports of tubes to foreign countries from 1874 to 1902 inclusive. Those figures exactly confirm the view mentioned above. In the year 1874, the total of our exports to foreign countries, as distinct from British Colonies amounted to 21,500 tons. This figure kept fairly level to 1887, when, owing to increased exports to Italy, and the opening of the new market of Japan, the total export came up to nearly 25,000 tons, which figure was again increased in 1889 to 29,000 tons. From 1889 to 1894, the figure gradually decreased to 21,000 tons. The period from 1896 to 1900 shows a very large increase, particularly in the years 1896 to 1897, but the explanation of this is that in such years quantities of tubes and fittings for cycle purposes were exported which were not separately classified. The years referred to will be remembered as the cycle boom. From 1897 a gradual decrease is to be observed until in 1902 we reached an increase in a period of practically 30 years of 4,000 tons only. Since 1894, the following new markets have been opened. Portuguese East Africa, China, Japan, Cuba, Mexico, Chili, Brazil, the Argentine, Egypt. To these new markets, in the year 1902, we exported no less than 12,500 tons, so that, notwithstanding our efforts to break new ground, we were very little worse off than before. It is in the protected markets of the world that we have lost ground. Below I give an analysis of our exports to the principal European countries in 1874 and 1902:—

Country.	1874.	1902.
Russia	2,573	1,495
Norway and Sweden	1,393	2,748
Denmark	825	291
Germany	4,706	442
Holland	2,425	1,051
Belgium	1,674	1,160
France	2,540	583
Spain	797	918
Italy	1,962	726
	18,895	9,926

From this it will be seen that our exports to the principal European markets have fallen nearly 10,000 tons, although in the meantime their requirements have expanded to nearly five times what they were in 1874. With regard to the expansion of our trade with the Colonies, we may say that in 1874 the export trade to our Colonies amounted to 4,000 tons only, and in the 29 years covered by our figures it has grown to 34,500 tons, showing the enormous increase of 30,000 tons. This increase has been a steady one from year to year, and the figures got, prove that we must look to our Colonies to be the great markets for our manufactures, and, by a system of preference and reciprocal treatment, we should build up a trade undoubtedly which would be the mainstay of our manufacturing industries. While the volume of trade with our Colonies has been satisfactory during the whole period, the selling prices have, unfortunately, been falling, and most of the tubes exported from this country have been sold at something near cost price. From this you may gather that, while we have held the Colonial trade up to now at all cost, the time has come when, in my opinion, manufacturers in this country must have some preferential treatment brought to their aid.

Colonial Trade.

With regard to the effect of foreign competition in our Colonial trade, we have collected and summarised the imports of British and foreign tubes into the various British Colonies, from which it will be seen that such trade is at the present time practically untouched by foreign countries, with the exception of Canada and South Africa.

Taking the Canadian market separately, which we have done in consequence of the differential classification and system of preferential tariffs in favour of this country adopted by them, we present herewith figures giving the quantities of tubes imported into Canada from 1883 to 1903 inclusive. Also a comparative chart illustrating same. Unfortunately, owing to changes in the methods of classification, we are not able to show a comparison on the same basis over the whole period covered by the figures. For the first four years, the Canadian Government recorded the imports of tubes in lineal feet, and in that period it will be seen that the bulk of the trade in tubes was in British hands. From 1887 to 1897, the method of classification was changed by recording the imports in both feet and weight, according to the size of the tube, and over this period it will be observed that the imports of tubes from this country gradually decreased until, in 1897, the trade had almost reached vanishing

point, while that of the United States, on the other hand, had gradually increased. The figures for the two countries for the two years referred to are as follows:—

Great Britain in 1887	..	..	1,390,607 ft.
" " 1897	..	..	144,011 ft.
United States in 1887	..	..	201,494 ft.
" " 1897	..	..	3,354,646 ft.

Also, the United States had a very big increase in the tonnage. The above figures are a striking illustration of how we lost ground in Canada in the short period of ten years. Owing to a further change in the method of classification, the effect of the preferential tariffs introduced by Canada in 1897, cannot be ascertained, although it will be seen that our trade considerably improved; neither, owing to a further change in 1903, is it possible to give the effect of the further preferential treatment accorded by Canada to British goods in 1901. Canada, however, in 1903, reverted to the same system of classification in use in 1897, and we give below particulars of tubes imported by Canada from Great Britain and United States respectively in those years. From 1897, Great Britain's trade advanced from 144,011 ft. to 2,844,702 ft. This is solely due to preference. I do not think it is due to anything else at all. The United States from 3,354,646 ft. advanced to 4,815,329 ft. From a review of the above figures it will be seen that the preferential tariffs have produced a remarkable effect, and that Britain seems to be slowly acquiring a standing in the market, and I hope and believe matters will continue to progress in this direction, and that a corresponding advantage to British trade will take place in every market where preferential treatment is accorded. There are no figures yet giving the results of preference in other markets. The preferential terms have not been ruling for a sufficient length of time. With regard to the rates of duty that would be suggested by the Association, we are of opinion that the duty to be charged should be the exact equivalent of the import duty for the same class of goods ruling in the country in which the goods are manufactured.

Effect of Canadian Preference.

804

The Scottish tube makers are not represented by us, but I may say that some of the largest makers in Scotland are thoroughly in sympathy with us. The export trade in tubes is carried on in the whole of the Birmingham and South Staffordshire district, as well as from the Scottish district. Of course, the larger amount goes from Scotland, which is nearer the sea-board. They can get f.o.b. about 2s. a ton. Though we are not authorised to speak on behalf of the Scottish trade, our representation would apply equally well to them.

Scottish Tube Makers.

805

With regard to the state of the tube trade, I think that the whole of the trade is suffering from depression.

806

What I mean by the term scientific dumping, as employed by the Germans, is as follows:—They have carefully examined those markets in which they can dump, at the cheapest cost to themselves. We find, in looking at the statistics, that those countries with which they have the best communication, they have adopted as their principal dumping markets. Of course, they dump very much more on the Continent than they do here—the Germans do—which is an evidence of that, I think. Then there is, of course, the American dumping in Canada to the large extent I have mentioned, shewing at once that they have chosen the Canadian market as the cheapest one to dump in.

Dumping.

807

What I mean by the character of tests, to which I have referred, is this:—Frequently tubes, which are brought from America, are not put under the tests at all. They are accepted as being tested there in America by themselves, and the certificate is very frequently accepted, but I should think, generally speaking, they have not been tested at all. Anyhow, they do not go to the expense of sending inspectors out there and putting them under the same rigid examination as ours, which certainly must give them a very distinct advantage in the price of manufacture. Our works can be readily adapted to the specifications of any other countries.

Tests.

808

We cannot meet Germany on its own ground, or America on its own ground, because we are excluded successfully by their tariffs, and we cannot meet them on the other ground because they sell at a dumping price, that is, below their cost price. Of that I am absolutely convinced. Consequently, we cannot compete with them in those markets at present, because their own protective tariffs put them in such a position, either by increasing their production, or by the extra profits they make, to dump down at a lower price than we can meet. The improvement in their plant, and the larger expenditure of capital they are enabled to make, owing to the security of their home market, enables them to compete against a large proportion of our works here, because a large number of our works here, owing to the difficulty of getting capital, in industrial concerns, have not been able to modernise their works as they would have otherwise done to successfully compete against the Germans. It only applies to some. There are one or two that have kept pace, but the bulk of the works are slightly behind the times, but would be modernised at once if capital could be got in industrial concerns by the security of the trade. There is no question about it at all.

Results of Foreign Tariff Policy.

809

The falling of our exports to Germany has been steady ever since 1874. Some years are worse than others, but from 1874 to 1882 they decreased 3,600 tons out of the 4,300 that they dropped. It has practically disappeared altogether since the tariff came in. We were sending, up to 1883, very large quantities, there, but in 1884 they dropped about 500 tons in the one year. The competition we have to fear is both in the home and in neutral markets, although they have dumped a larger proportion in the neutral markets up till now, but, as soon as their production increases, I think they will certainly attack our market more vigorously. Our home trade has increased, but so has the dumping. While they only send, perhaps, 20 per cent. of our home requirements to-day, the prospect is that, unless we do something, they will be sending from 30 to 40 per cent. within a few years. This 20 per cent. of the home trade means 25,000 tons of tubes per annum, a quantity which would give employment to 4,000 men.

810

With regard to the necessity for Colonial preference, we do think the position is most urgent. The sooner it is adopted the better for British trade, and I think it is a matter of extreme urgency. These people are taking away home trade from us; they are dumping down in the neutral markets, and we can only look to our Colonies, and we can get the South African and Canadian trade, I am positively certain, if we get preference, which will be an enormous increase in our export trade at once. Canadian preference has been very effective, as you will see from the figures given.

Necessity for Colonial Preference.

The reason why the Colonial markets have expanded so considerably is, that we have made a dead set for those markets. We made up our minds that we would not lose our Colonial trade, whatever we lost elsewhere, and I can assure you that what I stated was correct. We have done it at a very great sacrifice indeed. The tubes have been sold for years and years now, approximately at cost price, because while these foreigners have not got into these markets, they have obtained foreign quotations against us, and we have had to meet them. The reason why we wish to retain Colonial markets is a sentimental one probably, but at the same time I think it is one that you must commend. I think a good many of us were expecting some day, that we should get preferential treatment in some form which it is now taking. We were determined to supply, if we could possibly, the whole of the tubes required for the British Empire.

811

Suggested Duties.

With regard to the suggested duties, we recognise that there is some difficulty in dealing with a country which had a high tariff when exporting their goods to this country through another, against which we had low tariffs. That is to say, German goods through Belgium or Holland. That is a matter we should have to face somehow. I know it is difficult to charge a different rate of duty for each place, but while it might be open to abuse, still, I think in the main, it would be the most effective form of retaliation. It would shut out those markets at once that were charging the highest tariffs to us. They would have to come down to a similar tariff to some of the lower countries, if they wanted to get any of our trade at all.

812

By effective retaliation, I mean that if other countries did not give way, and bring down their duties, we should actually institute those tariffs in this country. If other countries came down, we should have a number of different tariffs all going at the same time, but we should be keeping their goods out of the country.

813

Weldless Steel Tubes.

I cannot give you much information in respect of weldless steel tubes. The importations of such tubes for Belleville boilers, are not included in the statistics I have presented. When I spoke earlier of a tube of inferior quality, I was referring to a lighter tube. In a certain class of tubes, the Americans have made a lighter tube for years, which has competed with ours, and they are accepted in competition with ours. We hold that they are very bad indeed, especially where they have to be laid in the ground, and for such purposes still they are being accepted. The change from wrought iron tube strips has not affected our trade in the Staffordshire district. I think most of us will supply iron or steel as desired, and have been able to do so for some years. I do not think it has affected our trade. The figures we have given apply to the actual tubes, and not to tube strips; so that apart from the loss of trade, to which we have drawn attention, there is also a very large loss in the manufacture of tube strips, while the loss on the imports into this country means sufficient work for 2,000 men in the tube trade, which would have meant 1,000 in the production from the raw material.

814

WITNESS No. 12.

SECOND (TUBE TRADE) WITNESS.

815

Statistics of Tube Works in different Countries.

I wish to give some figures as regards the proportionate increases of the tube trade in protective countries as compared with that of Great Britain. I should have preferred to have been able to give some statistics in tons or in money value, but these figures are very jealously guarded by our foreign competitors, and we are unable to get them. The most reliable information we have been able to get, in order to give a proper comparison, is the number of plants that have been put down in the various countries during a period, and I am able to give you exactly the number of wrought iron tube works in existence in 1870, and at various subsequent dates up to and including 1902. A very careful examination of these figures shows—that in 1870, Great Britain had in existence 23 works; America had 7, Germany 1, and Belgium 1. Then in 1902, the increase in Great Britain was from 23 to 39, being an increase on only 16 works. America rose from 7 to 37, an increase of 23 works; Russia from 0 to 9, an increase of 9 works; Austria from 0 to 5, an increase of 5 works; France from 0 to 5, an increase of 5 works; Belgium 1 to 3, an increase of 2 works; Spain 0 to 2, an increase of 2 works. So that from 1871 to 1902, a period of 33 years inclusive, Great Britain has built 16 works, and other foreign countries, added together, have built 76, or practically their increase has been five times that of Great Britain. The foregoing figures give you exactly the progress of each country manufacturing tubes—but for the better comparison, as I said before, the whole of the Continental works are grouped together. That shows the competition which the trade feel coming generally from the Continent taken as a whole, and not in separate countries. Although Germany is our great competitor, at the same time the other countries are manufacturing, and if not actually exporting, they are making for their own consumption, and therefore reduce the quantity of imports required, so that, for the purpose of a better comparison, I have included the Continent of Europe as one, America as one, and Great Britain as one—that being the chart No. 2. To show the separate increases of Great Britain, America, and on the Continent of Europe, and also the great strides the Continent has made, I beg leave to lay before you a chart on the above lines, showing each section, starting in 1870 at zero, and so giving you at a glance, the increases of the various sections to 1902. So that we have again, really, in Great Britain, an increase of 16 works; in America an increase of 30 works; and on the Continent an increase of 46 works; so that while America's increase is double that of Great Britain, the Continental increase is nearly three times that of Great Britain. To put it another way: while Great Britain has increased from 23 works to 39 in 33 years, equalling about 75 per cent. on the state existing in 1870, America has gone from 7 works to 37 in the same period equalling about 400 per cent., while the Continent has risen from 2 works to 48, equalling the extraordinary percentage of 2,300 per cent. So that you can readily see how rapidly they have increased in the protected countries against what we have in this country. Originally, Great Britain was the home of the tube trade, and where tubes were first manufactured, and it is only, as far as we can see, the high tariffs that have enabled the Continent and America to get such high prices in their own countries, and has enabled them to make tubes at a profit to themselves, and export their surplus, even at a loss; and I think I shall be able to show you later on, that for the first ten years they did but little just manufacture for their own consumption.

As to the output, we are not able to get absolutely accurate information, although we have got a good deal of information; but taking the German works as a whole, and comparing them with Great Britain, they would be considerably larger, each work for work, for this reason. In Germany there are no small tube works, but in Great Britain, especially as it started in the early days of small works, which are still continued making small quantities of tubes, so that we have a lot of small tube works turning out only limited quantities, but in Germany there are no small works owned by private individuals. They are all large syndicates, and their works are all put down with large capitals, and therefore are very much larger, so that we might take it practically, and it has been asserted by the German works, that the 24 German works quite equal in their output the 30 British works—quite equal it. But then the Russian, Austrian, Belgian, French, and Spanish works are not so large. The Austrians are fair-sized works, and I should think that their output would be nearly the same, work for work, as those of Great Britain, but, as regards America, their class of trade is absolutely different to the British. They make very large tubes, and run to long lengths and large quantities, and I should think that, taking work for work, the American works would be considerably larger than those of Great Britain. In fact, there is one work in America—one of the largest works—the proprietor of which claims—and has stated so on one or two occasions—that his output was equal to the whole of the output of Great Britain. I do not take that as an absolute fact, but, at the same time, it is asserted so.

The foreign competition we feel all over the world, but more especially from America and Germany, who, by their process of dumping, have gradually pushed us out from the markets formerly occupied by Great Britain. Personally, I have only dealt with the Continent. The other representatives of the Association who accompany me will give you further information as to the Colonies. I will give you a statement, showing how Germany has now practically captured the whole of the Continental trade. I should like to say here, that the figures I am about to give are the exports of Germany alone. They are not exports from any other part of the Continent of Europe. There are very few of the countries keep the absolute figures, and it is only from Germany we have been able to get what their absolute export is. Of course, their export is excluding—the same as Great Britain—what they manufacture for their own consumption; neither does it include what is manufactured by the five works of Austria, and the nine of France, Russia, Belgium and Spain for their consumption. They may export, but if they do export, it is very little indeed, and can scarcely be taken into consideration, so that I start in the same year, as I was able to start with as to the works, 1870. In that year, Great Britain practically supplied the whole of the tube requirements of the Continent. I have a chart here which gives the exports to the Continent only (handing in same). In 1870, as I say, Great Britain practically supplied the whole of the Continental requirements. At that time there were only two works on the Continent; one was erected at Cologne in 1869, and the other at Liege, built in 1870, neither of which were doing little more than what was required for their own consumption. In fact, they were not in much more than an experimental stage at that time. You will see by the chart that the total requirements of the Continent at that date were 10,000 tons. If you go to 1873, you will see that the Continental requirements had jumped up to 21,500 tons. You get the total requirements, I may say, by adding the exports of Great Britain and of Germany together, but, of course, that does not, as I said before, include whatever they may have made for themselves. So that their requirements were much greater, and their imports were such, that in 1873 they jumped up to 21,500 tons. Then, just after the Franco-German War, the Germans were building works, but they were manufacturing very little, so that, at that time, we may take it that their requirements were 21,500, and Great Britain was exporting that quantity. Since that date the Continental requirements have gradually increased, and very largely, but Great Britain's share of that increase has been on the downward grade. From 1873 to 1883, I have been unable to get any figures as to what Germany actually exported year by year to the Continent, but that they were exporting there is no doubt, because, when we come to the year 1883, we find that she is exporting 19,000 tons, and we can hardly expect she did that the first year, so that I think she was gradually gaining ground from very early days. In 1883, out of 33,000 tons, Great Britain only exported 14,000 tons, while Germany had exported 19,000 tons. In 1888, out of a total of 34,500, Great Britain had fallen to 13,000 tons, while Germany had risen to 21,500 tons. The same followed in 1895, when the total was 39,500 tons, Great Britain still falling and only getting 11,000 tons, as against Germany's 28,500. For the years 1896 to 1900, the trade of Great Britain has gone up considerably. There is a big jump, but that fact is accounted for by the Board of Trade, or whoever it is who makes up the returns, having included cycle tubes and solid drawn tubes in the exports, instead of as they had before, and have done since, only included ordinary wrought iron tubes. It was a big boom in the cycle trade at that time, and it jumped up the quantity, so that you may take very little notice of that rise. We may go on, therefore, to 1901, when you will see that the total requirements had risen to 54,000 tons, of which 11,500 only comes from Great Britain, and 43,000 tons is taken by Germany. In the year 1902—and these are the last figures that are available—you will see that the total has now risen to 56,500 tons, and that Great Britain only supplied 10,500 tons, while Germany gets 46,000 tons. You will, therefore, see that in 1870, the requirements of the Continent were only 10,000 tons, the whole of which Great Britain supplied, while in 1902 the requirements had risen to 56,000 tons, in addition to what was made for the home consumption by the works in Germany for Germany; in Austria for Austria; in Russia for Russia, and so on; so that while Great Britain had only increased since 1870 from 10,000 tons to 10,500, namely, 500 tons, Germany has increased from exporting nothing at all, to exporting 46,000 tons to other countries on the Continent outside Germany. That, I think, shows the mode in which the Continental trade has been gradually captured.

The conditions and circumstances, which have enabled Germany to increase her export trade to the Continent, is rather a difficult question. But I should say, first of all, it is Germany's geographical position that is of some advantage. Then also, there is, of course, the fact that Germany, being a central state, she mixes much more with the other Continental nations, and so gets a rather more intimate acquaintance with them; and also, is more up with their weights and measurements, and language, and general requirements, than we could be expected to get as a sea-bound nation. We do not get over very much; that is one reason, I think. Then they have some advantage also in railway rates. I understand their railway rate for the carriage of goods is much lower than it is in Great Britain; but those two together, I do not think, are sufficient reason to account for their getting so large a proportion of the trade. I think that there is much more to be accounted for, to a very large extent, by the fact of the large increase of price they obtain in their own country, which enables them to sell any surplus they may have at unremunerative rates, and so cut prices when they are in competition with other countries, and naturally thus obtain orders. Germany also, of course, by reason of their shutting out our goods, raised up her own industry in the manufacture of tubes to this great extent of 2,300 per cent, so that in that way, and with these very large works, they are enabled to manufacture somewhat cheaper.

**Continental
Railway Rates.**

I have tried to get what information I could as regards Continental railway rates, and I have various quotations from carrying firms for carrying tubes—I thought that was the best way of getting it—from the seat of manufacture here, to the seat of manufacture there, and *vice versa*. I have quotations for carrying tubes from a town here, that is to say, from Birmingham in all instances, and there is an advantage of some shillings a ton in favour of the Continental competition. If I were sending tubes to a place in Austria-Witcowitz—there are two large tube works there—it would cost me 37s. 3d. a ton to send them: but if Witcowitz works want to send them to Birmingham, the same tubes, I find they can get it done for 33s. 10d. per ton, which is 3s. 5d. per ton in their favour, or practically as near 10 per cent. as you can make it. Then again, if you take another tube centre—Birmingham to Liege—the rate is 25s. 3d., but the Liege tube maker can send back to Birmingham at 22s. 9d. That is a difference of 2s. 6d. a ton. From Birmingham to Düsseldorf—that is the largest seat of tube manufacturing in Germany—the rate for tubes is 24s. 6d. a ton, but if you reverse it, and take it from Düsseldorf to Birmingham, the German pays a rate of carriage of only 22s. 6d., which is 2s. per ton in their favour. These quotations, I might, perhaps, say, are all practically of the same date, and in most instances they are from the same firm who gave me the rates both ways, so that they do not make any disguise about the matter. They merely give you the rates. I have tried to get some of the internal rates, but I have been unable to do so, I am sorry to say.

819

**Selling Prices of
Tubes in Protected
Countries.**

It is a fact that tubes are sold at higher prices in protected countries than the same countries export and sell at in Great Britain. On February 15th, 1904, I got from the British Consul at Pittsburg, America, the discounts from the American price lists that the tubes are being sold at in Pittsburg—that is the largest seat of manufacturing of American tubes. That was in truck loads of 5 tons. When I worked out this on the American price lists, less the discounts given me, and at per thousand feet—taking a thousand feet of each of the sizes for which I am able to get a price, namely 14, making a total of 14,000 feet—I got a net sum that they would pay in Pittsburg of £420 4s. 1d., and on the same date—and it fortunately happens it was the same date—I got a quotation from the United Steel Products Company of America, practically the selling spot for some of the large American works for tubes delivered in the Thames, London. These discounts are quoted from the English price list. I took a thousand feet of each of these same fourteen sizes—they are the running sizes of the trade—and less the discounts which they gave me, it made for the 14,000 feet £332 14s. 6d., so that the American is really dumping in the Thames, at £87 9s. 7d., for this quantity of tubes, less price than he is obtaining at the point of manufacture, where he has neither to pay freight nor carriage. In other words, he is selling at 26½ per cent. higher price in Pittsburg than he is selling these same tubes in the Thames. Then, as to the German prices, I have got a similar quotation from Düsseldorf, which is the seat of manufacturing in Germany. I had a quotation sent me by a man, whose name was given to me by the British Consul, as that of a man who was perfectly reliable for getting any prices which I might wish to have, and he gave me a quotation for various sizes of gas tubes there on April 9th. He only gave me ten sizes, so that I took 1,000 of each of those ten sizes, and it equalled a value of £149 17s. 7d. Then I have a quotation of a rather earlier date from a company in Düsseldorf, for tubes delivered free Thames, which gives £119 19s. 8d., so that the German maker is selling in London at £30 18s. 11d. less price for the 10,000 feet than he is obtaining where he is manufacturing; so that really, when you work it out again, he is getting really 26 per cent. higher price in Düsseldorf than he is willing to deliver the same tubes in the Thames. It is rather extraordinary, but they work out within a quarter per cent. of each other, and I think into Germany the *ad valorem* rate of import duty falls rather close on to 25 per cent. The quotation I had was delivered free Thames, and on it is an added remark, which says:—"Might reduce if you have order to place." It was in January when I had that quotation, and tubes to-day are much lower than they were in January, so that I think there is little doubt if we were to get them to-day we might have them even lower than that delivered in the Thames.

820

I have no information as to the prices obtained by the Germans and Americans for the tube strip, nor can I tell you whether there is any bounty on the exportation of tubes in those countries, though I should think it is more than probable.

821

All my observations in respect to tubes are confined to wrought iron and welded steel. They do not include Belleville boiler tubes, nor weldless steel gas bottles and goods of that description.

822

Standardisation.

There is no very large difference between German and British standard screws and taps; they come down to our threads as a rule. The Americans sell some tubes over here that have American threads, but it is practically only to American firms, who come over here and put up radiators and various things, where they have been importing tubes beforehand, with the American thread, and they still continue it. We make, if anyone asks us, and we do so frequently, to the American thread, and we can do just as readily as the English thread. There is no difference in the German thread. The substitution of lap-welded by steel tubes may have had something to do with the rapid growth of the German tube trade, though not very largely. But, even if the solid drawn tube were eliminated, the results do not show much difference. Düsseldorf firms are certainly selling weldless steel tubes nearly as cheaply as lap-welded; I do not know whether they are producing them at that price. The lower grades of iron and steel tubes are being most effectively shut out by hostile tariffs, but, so far as the Continent is concerned, an additional fact is that they are making them themselves.

823

In the figures, which I have given, you will find exports from Germany to Belgium and Holland. These are rather large, but I cannot say whether any or what portion of these are re-exported. No doubt the figures being so large, part of them must be re-exported.

824

With regard to the difference in railway freights out and home, I am inclined to think this is due to allowances made on the other side, rather than high rates for out freights in this country. I ran out the rate from Witcowitz to Birmingham, and deducting what was the railway freight or home rate to Hull, that gave about 1d. a mile, but, taking the distance to Witcowitz as over 400 miles, it gave something over ½d. a mile to carry it. I have not been able to ascertain where the difference really comes in; I think it must be on the other side.

825

**Effect of Imports
on Home Trade.**

Last year we imported 25,000 tons of tubes. As near as I can work it out, this would represent 20 per cent. of the production of this country.

826

If we had this 20 per cent. additional work, our works would be in very much fuller operation than they have been; this would have the effect of most materially reducing our costs. If we can increase our output 10 per cent., then charges are diminished to begin with by 10 per cent.

827

828 I think there is little doubt that, if there is no change in the present system, we shall lose a further proportion of the home trade. The imports into this country were considerably greater in 1903 than in 1900, and they have been increasing steadily.

829 To a large extent, the loss of our export trade has been compensated for by an increase of the home requirements. Up to a few years ago, a large share of that increase was supplied by British firms.

830 Some time ago we estimated that the total output of the 24 German works would be equal to 39 British works, so that measured by tonnage, the German output has quite caught us up. We have not got these actual figures, but we estimate them from our knowledge of the various works, and the conditions under which they are working. I think that on the whole we are just about level at the present time.

831 As I have already said, the home consumer pays a higher price for these tubes than the export prices. If this consumer be a manufacturer for export, I have no doubt that some rebate is given him in order to compensate for the disadvantage he would otherwise be at, but have no direct evidence of it.

832 I certainly think that the larger British tube works are quite up to date in all modern improvements. Some of the larger works are probably not afraid to introduce improvements in their works in consequence of this foreign dumping, in the fear of having their markets spoiled. No doubt a good many of the smaller firms are not quite up to date. **Efficiency of British Tube Works.**

833 The loss of the export trade has been covered by an increase in the home trade, and, although there has only been one new works built since 1887, there have been considerable extensions to old works.

834 I think the figures we have put in show that, not only did the United States and Germany dump their tubes in this country at a price probably much under cost to them, but they also dump their goods into our other markets.

835 We are at present only working half time; at any rate, considerably under full time. The hour rates of wages has not been generally reduced, but the earnings of the men have, of course, diminished considerably. The men work at a piece rate. The Mannesman Company is really an allied works of the German Company. They have works in Austria, Russia and Great Britain; each is designated by the country in which it is situated. The German Mannesman supply frequently the British Mannesman with a large quantity of unfinished tubes, and they finish them. Looking at our trade with Germany, although there have been considerable fluctuations from year to year in the amount of our trade, the present depressed condition is really a permanent one. During the last five years it has steadily dropped. If any large demand suddenly arose, which the Germans could not supply, I think we should export again, but our great exports are to Sweden and Norway, and other countries where they do not manufacture.

836 The expansion of the German trade has been due somewhat to tariffs, railway policy, and education, but the principal thing is undoubtedly the tariff. The difference of cost between full and half work accounts many times over for all those factors. Beside the tariff question, the other factors are practically negligible quantities.

837 It is stated that the idea in exporting is to increase output, and thereby diminish costs. Well, I think there can be little doubt that these tubes are sold at considerably less than it is possible to produce them at; certainly less than we can produce them at in Great Britain. British tube manufacturers did formerly purchase some of their iron and steel strips from Germany; I do not think they do so now. I rather think that they now look upon it in the light that, by purchasing strip iron or steel, they are only assisting other works to increase their output and reduce their cost.

WITNESS No. 13.

Witness No. 13.

THIRD (TUBE TRADE) WITNESS.

838 In the manufacture of tubes, labour bears a very considerable proportion to the whole cost of the finished tube. My firm not only manufactures tubes, but also pig iron and tube strip iron, and, therefore, I am in a position to get data of actual costs over a considerable period to calculate the proportion of labour on the different stages of the process of making tubes; first of all, in getting the raw material—coal and ore; secondly, in the manufacture of pig iron; thirdly, in the manufacture of tube strip iron; and fourthly, in the manufacture of tubes. I have taken (1) the quantity of coal and ore necessary to make a ton of pig iron; (2) the weight of pig iron required to make a ton of tube strip iron; (3) the weight of tube strip required to make a ton of tubes; and the result shows that, leaving out of account the cost of materials for repairs and maintenance, and all establishment charges, and also the value of by-products, of the total cost of making a ton of tubes at a given period, was 84 per cent. cost of labour. On this basis I estimate that the total loss to British labour, from 1899 to 1902, resulting from the importation from tubes from Germany and the United States, was £712,096, or, in other words, £178,024 per annum. That is not including, of course, the last year, which we had not the figures for, which show a larger loss. **Proportion of Elements of Cost**

839 The increased output that would result from the stopping of imported tubes would reduce the cost of manufacture, not so much by the decrease in the average of dead charges, consequent on a larger output, as by the possibility of more economical organisation of production, and of more efficient methods of manufacture. Apart from the increased output, the stability afforded to the trade would encourage makers to lay out money on **Increased Output and Economies.**

improved appliances. I could give many instances taken from American practice, to show how an increased output admits of the introduction of more economical methods in the manufacture of tubes, but one readily appreciated instance will serve as an example. In American works it is the practice to make one, or perhaps two, sizes in one mill, which allows every detail of that mill to be specially designed to suit rapid and economical production. It also allows of a greater development of efficiency on the part of those operating the mill. In British tube works, a large range of sizes has to be made in the same mill. I consider that one of the principal reasons why America is able to manufacture so many products cheaper than we can, is, that she has a protected home market. It is no doubt a market continually expanding, and its possibilities in this direction are very great. Such conditions are not obtainable if the British Isles are taken alone, but if the British Empire be taken as a whole very similar conditions and advantages would result.

839 *contd.*

Effect of Tariff on Home Prices.

The natural effect of the removal of foreign competition would be to raise home prices, but this would be counterbalanced by competition amongst home manufacturers, as the present capacity is largely in excess of the demand, and the reduction in the cost of manufacture would enable larger profits to be made without any increase in price. It must also be borne in mind that the increased confidence in the stability of the trade would very much facilitate the raising of capital to enable new firms to start if the profits were made too tempting.

840

That the effect of a tariff would not hinder Great Britain, in competing with other countries in mutual markets, is proved by the example of Germany and the United States, while the reduction in cost of manufacture would obviously be of very considerable assistance.

841

The effect of the recent increase in the production of other countries is to enable these countries, by sending only a small percentage of their total production into Great Britain, to bring down prices to an unremunerative level, while at the same time the cost of production in this country would be increased by the consequent reduction of output. For instance, if the United States were to send into this country only 10 per cent. of their total output of tubes, the home output would go down nearly 50 per cent. It will readily be seen that America could afford to do this at cost, or even below, without a serious loss to themselves, while the effect on the British manufacturers would be ruinous; in fact, the growing disproportion between home and foreign production practically places our trade at the mercy of the foreigner.

842

Combinations in Germany and U.S.A.

The effect of recent combinations in Germany and the United States have resulted in such economies, that they are enabled to cut prices to a greater extent than formerly, without loss. In the second place, they are able to organise their exporting machinery with the least possible expense, both in obtaining business, and in handling and distributing their goods. In the third place, combination prevents waste of power caused by overlapping, and possibly the overlooking of weak spots in the ranks of their opponents, and enables them to concentrate their power in a way to ensure the greatest amount of injury to their competitors at the least cost to themselves. With regard to questions of cost, I believe that the proportions as regards labour would apply equally well to Scottish practice as to my own district.

843

Though the purchaser of foreign tubes at a price below our own cost derived some advantage from that importation, I do not think it is at all likely that he would have been unable to complete any of his orders if this supply had not been open to him. The proportion of tubes to a finished machine is, in general, comparatively small.

844

The German trade does not confine itself so strictly to the manufacture of standard tubes as the Americans. The British tube maker cannot pursue the same practice, because his demand is not sufficiently large. I do not think the British home market is one-tenth of the size of the American home market, and theirs is expanding extremely rapidly. The American production of tubes is about five times the British production.

845

With regard to the relation between selling price and net cost, I may say there is a very small margin indeed under present conditions.

846

Capacity and Output of Tube Works.

The present capacity of tube works in this country, including tube works erected, although it must be admitted a number are practically out of date, vary probably between 30 and 40 per cent. in excess of the present demand, if not more. In our business, fixed charges amount to about 10 per cent. of the total sales. Running short of full time makes a difference, not only in diminishing dead charges, but also in the manufacturing cost, and that is the most serious thing really.

If a tariff were imposed in this country, I believe it would be possible and practicable for the British manufacturers to adopt the elaborate organisation of export trade which you find in Germany and in the United States. The differentiation of export and home prices would not be consequent on such protection of British markets, because such a differentiation already exists. No doubt if the effect of protecting the home market were to raise the prices of tubes, it would tend to increase the cost of those articles, of which tubes are a component part.

847

The effect of an increased importation of foreign tubes would be to cause loss from reduced prices, rather than reduce output. The decrease in cost of manufacture hinges almost entirely on the question of the size of the output in tube making. I do not think prices would necessarily rise if we had a tariff. I admit they might rise at first.

848

Efficiency of Regular Employment.

I think there is not the slightest doubt that our labour would be very much more efficient if it were regularly employed. The men get into a slack sort of way through irregular employment, which has a very serious effect on the efficiency of their labour. If we had a tariff in this country, I think it would be necessary to have different rates for different kinds of tubes—butt-welded, lap-welded, and seamless.

849

The Ehrhardt process for the manufacture of seamless tubes, employed in Germany, is not a cheap process compared with those employed in this country. The works started here came to grief.

850

- 851 My firm had a great deal of experience in the effects of dumping, and we have taken advantage of dumping to some extent by purchasing our raw material from abroad. This has been—firstly, pig iron, and secondly, raw steel in the form of tin bars. Since 1900 we have had foreign steel dumped into South Wales from America, but afterwards from Germany, and again from America without cessation. **Dumping of Pig Iron and Steel.**
- 852 We should be glad to see the process stopped. During the time that the steel has been coming in it has averaged from 5s. to 15s. per ton less in price than our cost. This is particularly the German steel. The American has not been coming in such large quantities. It was only for a short time in 1900 that the American steel came in large quantities. **Prices.**
- 853 It is an advantage to our firm to buy pig iron, but to our disadvantage to see steel come in. We bought the pig iron from syndicates in Germany through merchants, but we understand that the syndicates get a bounty on pig iron. It was from about 2s. or 3s. per ton cheaper than the English material could be bought at. **Purchase from Syndicates.**
- 854 It was an advantage at the time to have dumped pig iron, but if the dumped pig iron had not been available the price of steel would have been a little higher, and we could have bought English material at 2s. 6d. per ton more than we paid to Germany, and we should have been pleased to do it. If the foreign pig iron had not been available foreign steel would not have been available either, and a small rise in the price of steel in South Wales would have enabled us to use English pig iron.
- 855 In the case of tinplates it does not make the least odds what the price of tinplates is within certain limits. We have just as great a sale for tinplates when they are 16s. a box as when they are 10s. a box. This is principally because, in the case of tinplates and galvanized sheets, we are the only country that exports at present, and consumers have to come to us, whatever our price is. **The case of Tinplates and Variation of Prices.**
- 856 We find no foreign competition at all in tinplates. I believe that the United States have exported a small quantity, but nothing we fear immediately. **Absence of Foreign Competition.**
- 857 We use basic, acid, and hematite iron. At the time we were buying the acid iron we were paying 58s. 6d. c.i.f. Swansea for the hematite and 48s. 6d. for basic. We put up our works with a view to consuming British pig iron, and we have used British pig iron since we started them until 1900. **Iron Used.**
- 858 The price of tinplates was from 9s. to 10s. a box for a good many years until 1899, and then the scarcity of coal and the high price of coal sent everything up, and tinplates went up in sympathy, and the demand being great at the time, they reached the figure of 16s. 9d. per box and remained there for some months. They are now about 11s. 6d. **Price of Tinplates.**
- 859 There is no reason to suppose that foreign countries will not be able to make tinplates in the future. We are very much afraid that tinplates may be exported from America in the future, in the case of stress from hard times. It is not likely to be permanent, but we are afraid we may feel competition sooner or later. About thirteen years ago, we little thought we should have American competition in steel. It was just as improbable as an export trade in tinplates would be to-day. America is beginning to compete in galvanized sheets now successfully. We feel their competition in galvanized sheets in the Canadian market severely. **Probable Growth of Foreign Competition.**
- 860 I know of no reason why the Germans should not make tinplates as successfully as the Americans. The Americans have given particular attention to it and gone to a great deal of trouble in getting South Wales workmen to come over and assist them. The United States has an enormous home demand for tinplates, much greater than in Germany, but there is a very large demand in Germany for tinplates, a demand considerably in excess of the supply, so that the home demand is not the reason why the United States are giving particular attention to the trade. **American Development and Home Demand in U.S.A.**
- 861 We do not now export much to Germany. We are in the position of being driven by the McKinley tariff to give up the manufacture of tinplates very largely, and we have gone in for galvanized sheets instead, and so our output of tinplates has been considerably reduced, and is now principally confined to the Colonial trade. I think that unless some considerable alteration is made in the way of a tariff this proposal of dumping will not only be maintained, but will be increased considerably. I think the dumping process a great disadvantage. **Effect of the McKinley Tariff.**
- 862 As regards the dumping of steel bars every ton of steel manufactured bears a certain cost and fixed charges, such as rents, rates, and so on. In my works these charges amount to some 4s. per ton of steel. Therefore, rather than curtail my output it would pay me to sell a considerable surplus at 3s. 6d. per ton less than my general cost. In Germany we have felt the effect of dumping considerably, owing to the fact that the bad times in 1902 made it necessary for the Germans to keep their works in order, with a view of keeping their skilled workmen together. **Fixed Charges and Disposal of Surplus Products.**
- 863 There is no doubt that the Germans are able to manufacture steel cheaper than we can in many ways because of their superior plant. In England there is not the same security for capital. When times are good in protected markets the profits are large, and a large proportion can be spent on improvements; but in England no steel works have had an opportunity of spending money on improvements except those able to take advantage of the rise in coal since 1899. Those that possess their own coal have improved their works, but those who have had to buy their pig iron have not been able to do so. **Security of Capital in Germany and England Compared. Its Effect.**
- 864 In the *Iron and Coal Trade Review* for January and February of this year, the Düsseldorf correspondent gives the price of basic pig iron at 58s. Düsseldorf. At that time we were offered the same pig iron at 48s. 6d. c.i.f. Swansea, and the freight was 5s. This made a difference of 14s. 6d. per ton between the home price, and the price we are asked to pay, and in the case of steel bars, at the same time the Düsseldorf price given was 92s. 6d., and we bought the same at 80s. c.i.f. Swansea. **Prices in Germany and England.**

**German Competition
in the Colonies.**

As long as the Germans have our market as a safety valve, it contributes to the stability of the syndicates in Germany, and as long as the syndicates are kept strong and efficient, they are better able to compete with us and the Colonies in such things as rails, so that our letting the raw billets and tin bars into England very directly, I think, assists the German competition in the Colonies, because it enables them to keep the works going in Germany, and by running fully they are enabled to keep their cost down.

865

**British and
"Dumped" Iron.
Difference of Price.**

At the time the Germans were paying 15s. more for their pig iron than we could buy it we could have bought English iron about 2s. 6d. only above what we were paying to Germans, so that the only advantage we got was the 2s. 6d. In the case of the material sent into England, I think in almost every case the steel was manufactured by works which produced their own pig iron. They had not to pay the extra 15s. in Germany.

866

With respect to the advantage derived from American dumped steel, I wish to say that I do not consider the conditions contemplated are likely to occur immediately, and if they did they would not be permanent conditions (because the item of labour in which America is greatly handicapped in competition with us, enters in so much larger a degree into the cost of finished sheets than of raw steel), unless by obtaining preferential tariff treatment by Canada, for example, the United States obtained an advantage over us in some particular market. If the conditions did exist temporarily, from time to time, the tinplate maker would lose less, during such periods, than he now does by reason of the disturbing effect of dumped steel upon his market for finished goods. If, however, these conditions ever became permanent and the export of finished sheets by America was large then dumped steel would be an advantage, if also continuously available. But as these conditions can only arise under artificial methods of fostering trade adopted by America and Germany, the more satisfactory position for us would be one by which we could shut out of our home market both raw and finished steel, and obtain in our Colonial markets a preference over both countries, so long as Germany and America retain their present methods. With universal free trade I don't see what we should have to fear. It is their profitable home markets that enable Germany and America to compete with us over the world, and provide the means of adopting improved machinery, regardless of initial cost.

867

**Import Duty.
Colonial Preference.**

In South Wales we think that, as steel makers, nothing but an import duty can possibly assist us; but in the case of the galvanized sheet and tinplate trade, we feel strongly that Colonial preference may be of the utmost value in the future, because we are afraid of an American export of tinplates. The Americans have sold some tinplates into Canada this year I am told, and they have in recent years sent large quantities of galvanized sheets into Canada in competition with ours. It is quite open to the Americans to send tinplates to Australia.

868

**Quantity of Raw
Material Available
from Abroad.**

It does not increase our sale to be able to reduce our cost of the galvanized sheets, because of the British competition. In the case of the galvanized sheet trade, and in the case of the tinplate trade, only a certain proportion of the raw material is available from abroad. I shall explain later how in the case of the tinplate trade it is absolutely impossible for the home trade to use dumped materials. In the case of dumping the selling price falls for everybody, and for every ton that you produce, whereas you save in cost only upon as much as you can manufacture from the dumped goods. It would not be an advantage to us to have a large supply of German material to compete against the approaching competition from America, but perhaps our experience may be rather special. We could not use the German or American steel which is sent here for our galvanized sheets, because we make very light gauges, and neither of these steels will answer. American steel is too soft, and will not make what we want.

869

**Canadian and South
African Preference.**

I think preferential arrangements with the Colonies desirable so as to secure that market partly, but it is rather difficult to say what preference would suffice. At present we have a preference in Canada, but in the material we send into Canada—tinplates and galvanized sheets—the preference does not amount to very much. We get a 50 per cent. rebate as against Germany, and 33½ per cent. as against everybody else. The bonus in Canada would only be upon the goods made by British manufacturers against the Germans, but we have a rebate. The duty is 5 per cent. on galvanized sheets, and we get a rebate of 33½ per cent. It is a big trade. The preference is not really substantial, because the duty being so small, it amounts to something like 3s. 9d. per ton in favour of us, which is not a large amount in galvanized sheets. We derive a little advantage from the South African preference, but we have no competitors except the Americans, and if the Americans want to get rid of a surplus they will do so whether the preference be 3s. 6d. or not.

870

Effect of a Duty.

In the case of iron and steel we should all feel the advantage of a tariff which protected the home market, and supposing America became a great producer of tin sheets and sent them to England, I should myself certainly be in favour of a safeguard against American competition. There are no immediate signs of American competition, but we are afraid of it; it would not be a fair competition. I do not think it is within the range of our imagination that the Americans could manufacture tinplates cheaper than we can, but they would dump their surplus. A small duty on pig iron and a larger duty on steel would not hurt anyone in England and would assist the steel works in South Wales immensely. There are a number of steel works in South Wales which were working four years ago now closed by dumping. I would put on a sufficient duty to render the home market secure without making it prohibitive and obtain a proper Colonial preference. The effect of such a duty on steel, undoubtedly in South Wales, would be, first, to raise the price of steel but not to the extent of the duty, because there are six steel works idle which were built for making steel tin bars that were working in 1900 or 1899. In addition, there are four works that have been dismantled in the last three years. I know of several works working to-day where half the furnaces which were built are idle, and all that production would be put into full swing if there was a rise of 5s. a ton in the price of steel. Undoubtedly, home competition would bring prices down and the duty would to a considerable extent be counteracted. There is no question that, if by the operation of a duty dumping was prevented, a larger production would take place here and the cost would be diminished.

871

Prices at Home.

A margin of 5s. a ton would be sufficient to raise the price and would be counteracted by a diminution of cost, and in time the works would improve themselves. I think it very likely that the price would not be increased at home, especially if we consider what the price of steel bars was before the foreigners began at all. There was sufficient internal competition then to keep the price down. I remember selling bars ourselves for £3 15s. a ton, which is as low as they have ever been dumped, and we made a profit then.

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Running full time was not the only reason why we made a profit, because we have not ceased to run full time since; there were other reasons such as coal and iron and the general market conditions.

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As to tinplates, the rise in price would be very considerably more in the case of the steel. The tinplate trade is a rather peculiar one because, from financial conditions and from the necessity of distributing the tinplates far and wide, the trade has got into the hands of merchants, and the merchants buy the tinplates out and out, and I should think the greater proportion of every firm's production is sold to merchants in that way. Therefore the merchants have a considerable hold on the prices. Whenever foreign bars have been threatened, or whenever foreign bars have been offered at below Welsh prices, the merchants have ceased buying, and the fall in price of tinplates has been much more than the fall in the price of raw material, and I think that for that reason if there were more stability in the steel bar prices the tinplates would be permanently higher than they have been. Up to 1899 tinplates had sold from 9s. to 10s. a box for a good many years, but the general rise in coal and in all materials brought tinplates up to 15s. a box by July, 1899, and from July, 1899, to April, 1900, they varied between 15s. and 16s. 9d. a box. They were at their highest in April, 1900. Welsh tin bars were £7 7s. 6d. a ton at that time. In May, 1900, there was a talk of American dumping, and the buyers of tinplates began to hold off buying because they expected a fall; consequently, the tinplate makers, whose resources have never been very large since the McKinley tariff had to reduce their prices very rapidly falling to 15s. for tinplates and for bars to £7. In July, the American bars came in and they were actually being sold at £5 5s. a ton c.i.f., against our price of £7 at that time, and the buyers completely held off buying tinplates, and there was a fortnight's stoppage of all the tinplate works. By November, 1900, tinplates had fallen to 13s. 6d., and the effect of the foreign sales was that bars fell £2 2s. 6d. a ton, whereas tinplates fell £4 5s. a ton. The price of tin was slightly different, but not more than enough to account for some shilling a ton, so that the tinplates fell twice as fast as the bars, and that has been the experience in each period of the foreign competition. In January, 1901, tinplates had fallen to 12s. 6d., and the bars to £5 5s.; in April tinplates were 12s. 6d., and bars £4 15s., but by this time the Americans began to hold off the market, and there was a steady improvement, and in June and July, prices were 13s. 9d. for tinplates, and £5 2s. 6d. for bars. When there was an improvement, bars rose 7s. 6d., but the plates rose £1 5s. a ton, on account of the cessation of American competition. Then the Germans began to offer bars, but the German competition was not serious. At first the quality was suspected, and it took a long time before the tinplate makers would use German bars with any confidence. German bars are not equal in quality to the English, but they can be used by certain makers; the tin worker requires a different thickness of bar for every specification of plate which he sells. Very often he will require one or two tons of one particular line; the Germans and Americans will not sell him anything less than 50 tons of a line, so that all works have to use a large proportion of English bars, and some of them are unable to use foreign bars at all. The fall in the price of tinplates affects all makers, but the fall in the price of foreign steel affects only those who can use it. The same thing followed a little later on. When the American demand took some of the German steel in 1902, prices bounded up at once in the tinplates, and went down again as soon as the Germans had finished that work.

The Case of Tinplates.

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German competition has not made the least difference to the wages paid in South Wales to the men, but employment has varied. There are strong Unions in South Wales; the Steel Smelters' Union is a very powerful one and well organised. We find it of some assistance in managing the men; so there has never been any occasion to fight the Union, and they have managed to keep the prices per ton, when furnaces turned out 100 tons per week the same as they are to-day when they turn out 400 to 500.

German Competition and Wages.

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The aggregate amount of wages paid has decreased, because so many works have been idle. The first hands on the furnace get 1s. a ton whether the furnace turns out 100 or 400 to 500 tons.

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In regard to steel bars, the German is always prepared to take a lower price than the English quotation. He will dump his material down or accept any reasonable offer you would be prepared to make; the Germans often sell very much cheaper than they need.

Dumping Prices.

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There is nothing at all in the assertion that the dumping of steel has been the salvation of the tinplate trade with America. Our trade with America has not increased except during a short time when the Americans had a strike. There has been a steady decline in our exports to America except for that one short period. There is not the slightest connection between the increase in the tinplate trade and the dumping of the material.

Dumping and the Tinplate Trade.

879

The increase of canning in different countries might have been expected to lead to an increase in the tinplate industry. All over the world tinplates have increased in demand, and they did so from the very time when the McKinley tariff stopped us. We should have expected to have had a larger export to-day than we had in 1890, and we should have expected to have had the American demand to supply if it had not been for the McKinley tariff. I can show how very badly the exports compare with the exports of 13 years ago. The tinplate trade felt the effect of the McKinley tariff probably more than any other trade, and I should like to mention one or two figures, because the Board of Trade returns that deal with the question are not satisfactory. They have not the information during the most interesting years. I am not sure that my information is absolutely accurate, but I know that it is not far off. It has been accumulated carefully. In 1887 there were 378 mills erected in South Wales. Up to that time and after that time the Welsh supplied the tinplates to the whole world; we had no competition to fear, and every year the number of works engaged in the trade increased. In 1891 there were 515 mills. On May 25th, 1895, after the McKinley tariff had stopped many of our works, and when it had enabled the Americans to supply their own demand (it took about four years for the Americans to build the works and gain the necessary experience), according to the evidence given by the Union Secretary before Sir Henry Campbell-Bannerman's Committee, there were 293 mills working and 221 idle. Up to 1891 the increase had been from 378 to 515; after 1891 they decreased from 515 to 293. During these years, 1890-95, out of 91 firms engaged in the trade 43 failed.

Effect of Increase of Canning.

880

A mill will produce about 700 boxes, or 35 tons a week. In regard to the number of men employed, you should take the men in a mill as being not only men employed in the actual mill, but in the annealing furnace and tin pots and everything, 60 to 70 men. In 1902, according to the Board of Trade returns, there were 397 mills working, so that there was an increase of 100 mills since 1895; but I should like to point out that of those mills in 1902 there were 80 mills to my knowledge included in the Board of Trade returns as tinplate mills that were not making tinplates but galvanized sheets and black plates of all kinds; and, although in our case we had altered the returns we send to the Labour Department of the Board of Trade, the return comes in called "Tinplate Works" (if I remember aright) to "Sheet Mills," no notice was taken of it, and it was only about a fortnight ago that I found we had been continually classified as "Tinplate Makers." A tinplate mill would be classified as at work whether running quarter time or full time.

Board of Trade Returns.

Displaced Labour.

Displaced labour has gone almost entirely into collieries. In the early years numbers went to America to teach the Americans how to make tinplates. The Americans offered great advantages to the tinplate makers to go over and take their men with them. Many of these have returned, but I know of a good many in my own experience who have remained there.

881

American Production.

In 1891 the Americans produced 500 tons of tinplates, in 1892, 18,000 tons, and for the last four years they have produced between 250,000 and 400,000 tons, and we think that we could have supplied every ton of that if it had not been for the American tariff. The American production is about three-quarters of our production I should roughly estimate.

882

American Re-Exports.

The Americans import a certain amount of plates for their can or for their oil work, which are produced in South Wales. This trade amounts to about 60,000 tons a year. Can work or oil work when exported from America is allowed a drawback of the duty or most of the duty. Our exports to America had sadly decreased until they had reached the point at which they represented the re-exports from America only. Since then they have been fairly constant, but they are on the down grade. We only retain that trade as the Americans care to let us, and there is an arrangement between the Steel Trust men and their workmen by which they shall lose that advantage. The workmen have agreed when it is necessary to allow a large reduction in wages, in order that the Americans may manufacture that themselves, and a fund has been formed for the purpose into which the amounts of the reductions of wages have been paid. This is in order to compete at equal prices. We have not felt the effect of it yet, but there it is waiting for the time when they want to make use of it.

883

Russia and Roumania.

The conditions in Russia and Germany are practically the same. Practically our business with them is a rebate business. In the case of Russia we know that the Russian Government are anxious to develop tinplate works in South Russia. They now buy a very large quantity of black plates from us which they tin in Russia. The Russians are trying to get firms to go out there and start the manufacture of the black plates themselves. We were invited lately to assist in works of that kind. There is very little doubt that they are making genuine efforts and as soon as they succeed in making the black plate and tinning it, we shall no doubt in one way or another lose the rebate trade as well. In Roumania there is a proposal to increase the duty, and we have been invited to go out there and make under that duty. Steel bars are let in free, and the duty is proposed to be a good many pounds a ton on tinplates.

884

Object of Foreign Tariff.

I have no knowledge of very much alteration in other foreign tariffs, but we send the tinplates into some countries under rebate, and to other countries under a tariff; but if any of those countries wish to make tinplates, as we know Russia and Roumania now do, we are in a serious danger. The object of these tariffs is to build up native industries. We have been invited to build a works ourselves. In the case of America, when the firms were going out to erect works, they had free grants of land and great assistance. These foreign countries want skill, that is all; they want to be taught.

885

Beginning of German and American Dumping

The first experience we had of dumping was of German iron and steel, caused, undoubtedly, by the over-production in Germany. The dumping of steel began in 1900, and of pig iron in 1901. The price that Germans would accept has risen considerably during the last few weeks; they are not so keen to sell as they were. American dumping began again towards the end of 1903, and was very severe in the early part of the present year. 50,000 tons of raw steel was imported into Newport in the first three months of the present year, and most of that was American. Their home trade being rather better just now, their keenness to sell has diminished. When I said that we would be prepared to pay 2s. 6d. more per ton for English material, and be pleased to do it, I meant that it is more convenient to have a regular source of supply. It is not convenient to rely on sources that may suddenly fail. When I said that we have just as great a sale for tinplates at 16s. a box as when they are 10s. a box, I desired to point out that during the last four years the best years have been when the prices of plates are highest. We cannot make a monopoly in the tinplate trade because it is divided up into such small units, and the sale abroad is so much in the hands of merchants.

886

Fear of Dumping of American Tinplates.

The duty into America is something like 7s. a box, and the American price is kept equal to our price, plus the duty. From the number of American mills that are idle, it may be inferred that it has not been a very profitable industry during the last four years. We do not fear any dumping from America immediately, but in the future. We think that tinplates will be dumped at a heavy loss by America, in the same way as steel; it might suit them to sell their surplus product at a lower price, and the rapid trade we do with them now amounts to about 60,000 tons a year, which might easily be captured, because our plates have to pay a freight and railway carriage. Extra cost of production in America is due to wages, but an arrangement has been made with the Unions and the Steel Trust to a reduction of 30 per cent. in wages upon such plates as are supplied to the Standard Oil Company, and other large consumers, in order to capture the rebate trade. America has begun to compete in galvanised sheets with us in Canada, and are active even to-day. I do not think they can manufacture galvanised sheets as cheaply as they can in Wales, because the rolling process involves a great deal of labour. I am told that wages are double what we pay per ton.

887

Growth of Tinplate Exports since McKinley Tariff.

I do not quite agree with the statement that one of the results of the McKinley tariff was to open up other markets for British manufactures. I have taken the following figures from an article written by Sir John Jones Jenkins. The export of tinplates to other countries than America in 1882, was 410,000 boxes; in 1872, 610,000 boxes; in 1882, 1,100,000 boxes; in 1889—that is before the McKinley Tariff—3,340,000; in 1896, 3,980,000; and in 1903 my estimate for the last year is 4,600,000, so that there was a steady increase of the export of tinplates, irrespective of America, during the whole of that period, and we tinplate makers cannot make markets, but can only supply the demand for tinplates as required, and we believe that we should have supplied all the markets that we do to-day with America in addition, but for the McKinley Tariff. Thus it is not my experience, nor that of tinplate-makers generally, that dumping enables tinplate manufacturers to obtain an increased demand in other parts of the world.

888

Scarcity of Labour in South Wales.

The depression in South Wales has caused some displacement of skilled workmen. One of the tinplate works within my own knowledge, some little time ago, was quite unable in 1889, when the revival in the tinplate trade began, to get the necessary labour to keep the works going, and we had to manufacture black plates instead of tinplates, for want of skilled labour, and we did everything we possibly could to get it, and failed. A great deal of this labour went into the collieries, where at that time wages were very high. It would be difficult to recover this employment.

889

- 890 A very small importation of dumped goods is sufficient to send the prices down. The figures I have given show that. When steel bars were offered, the price of the tinplates fell rapidly.
- 891 Americans are working up to the requirements of the world in the matter of quality of steel. American acid steel is always more brittle than British acid steel, but the Americans have been making basic steel during the last few years, and I should imagine that the ductility of their product is improving constantly; in the case of tinplate bars it certainly is. The galvanized sheets made from American bars are as good as those made from English bars, except for special qualities of tinplates, or for very thin galvanized sheets. **Quality of American Steel and Sheets.**
- 892 On Colonial preference, what I should like to say in the case of galvanized sheets or tinplates is that the value of the preference will depend entirely on the amount of duty, and unless we get a preference of about 10s. a ton on the tinplates or galvanized sheets, it will not be very effectual. My idea is that nothing less than a preference of 10s. would be of any substantial value to the tinplate trade or the galvanized sheet trade. **Colonial Preference.**
- 893 The estimate I have made of the value of tinplates manufactured in 1903, is purely an estimate. It is most difficult to get at the figures. I estimate the value of tinplates in 1903 at £5,687,500, and black plates and steel sheets, made of tinplate in addition, £960,000, making a total of £6,647,500. In 1891, there were 515 mills in existence, and since that date 52 have been dismantled; six have been added, so that there are to-day available 469, according to my information, and I do not think I am far out, because the Board of Trade returns for April, 1902, give 460 mills. Of the 469 of my estimate, 34 have been permanently adapted to sheet rolling, so that for actual tinplate making, only 435 are available to-day. In 1903, according to the Board of Trade returns, 370 was the average number of mills at work, so that that left 65 mills idle capable of making tinplates. If those 65 mills had been at work, they would have employed about 3,900 men, and the value of the product would have been about £1,310,400, and the amount of wages would have been about £250,000 per annum. If it had not been for the loss of the American trade, the 52 dismantled mills, and the 34 adapted to sheets, would also have been working tinplates, and if they had been able to keep the American trade they had built up in other parts of the world, I estimate we should have made, in 1903, about 20,000,000 boxes, and we should have required 265 extra mills, employing 15,000 extra men, and providing £1,125,000 extra wages. **Output of British Tinplates.**
- 894 We cannot get back the trade we have lost in America, but we think that if the disturbing influence of dumping bars can be got rid of, that would be a permanent benefit to the tinplate trade. We also desire the retention of our present markets. We are afraid that we may at any time lose a large share of the Continental markets, and that ultimately dumping may take place in the Colonies. I do not think that the Americans could have started the tinplate trade without protection.
- 895 It is not true that the works which are closed down have not efficient machinery, though that may have been the case in particular instances. The British manufacturer is not, to any great extent, behind the American in perfection. I think the best of the American works are better than the best of ours, but I do not think we are behind them as tinplate makers.
- 896 I have no information that the Colonies at the present time are trying to make tinplates. Germany, Italy, and France make tinplates successfully. Russia tins our black plates, and is doing everything it can to manufacture black plates for tinning. We send some tinplates to France and Germany under the tariff, but the principal markets on the Continent are rebate markets. Most of the plates we send to Germany are for export, though we supply some of the German home market in direct competition with the German manufacturers.
- 897 If we suppose a duty of 10s. a ton on steel bars imported into England, the duty would probably at first raise the price, but internal competition would shortly reduce the price, and I estimate the price at which idle works could live, to be about 5s. advance upon to-day's prices. **Effect of Duty on Prices.**
- 898 The Germans often sell very much cheaper than they need. By that I mean, for example, that in the case of the steel they send to Great Britain, they do not seem to care about the business at all; they take no trouble about it; they take a very low price, so low, that it would pay the Englishman to buy it and take all the risk. They will not make satisfactory guarantees as to delivery, or supply the material in the units we desire; they insist upon not less than 50 tons of each size for each line, and all the different gauges arrive mixed clearly sell at much less price than they could if they sold intelligently. Their object is really to get rid of their surplus, and to keep their works fully employed. It is not a regular trade so far as tinplate bars are concerned, but I am only speaking of tinplate bars.
- 899 These tinplate bars are rolled to specification, but a specification of less than 50 tons of one size is not accepted, nor will they guarantee that they will arrive unmixed. As a general rule, the tinplate makers do not desire the German steel at all, and they do not try and get it; they first hear of it when the Germans have a surplus to get rid of. The Germans find out what the English price is, and quote so many shillings a ton under. I do not think they go round for offers, because, in the case of the American dump in 1900, they offered bars at five guineas when our price was £7. As a rule, they fix their price about 10s. a ton under British price.
- 900 In correction of a remark made in my first examination, I should have said that since 1890, 41 firms out of 91 have failed.
- 901 According to the *Labour Gazette*, the average men employed works out at 50 men per mill; in the case of the works that I have actual knowledge of, 60 stands as the correct figure. The explanation may be that the Board of Trade includes black plate mills as tinplate mills. In the cases I took, all the work was one practically on tinplates.
- 902 I do not think, except in the case of the employment of more machinery than many of the works have now, that technical instruction is of very great importance. My opinion is that the export policy of foreign countries would not be successful but for the British policy of free imports. I think the change of fiscal policy would lead to a greater demand for pig iron in this country, and there would naturally follow a cheaper production. **Conclusions.**

I am a manufacturer of wire, wire ropes, and netting, and I wish to confine my remarks to these branches.

American Competition in Canada.

I may give one instance of the methods of foreign competitors. The United States sell in Canada upwards of 20,000 tons of barb wire per annum, which they distribute through the medium of the Canadian Hardware Association. At the commencement of each season the United States Steel Corporation enter into an agreement with the Canadian Hardware Association, binding them to buy their barb from them. The United States Steel Corporation guarantee the Canadian jobbers a profit of 10 per cent. and handle the trade with despatch, and in a thoroughly satisfactory manner. The price charged is one at which English manufacturers would be quite prepared to do business. This, however, is impossible, for any attempt to get a jobber to buy elsewhere than from the United States results in reprisals of a serious character in the shape of an attack on the jobbers' customers, and refusal to supply the jobbers with barb. There are very large quantities of barb consumed in Canada, and the trade, having grown under the hand of the United States manufacturers, they are in a position to supply the enormous requirements. The English manufacturers as at present situated could not supply these large quantities, and that puts another strong weapon in the hands of the United States suppliers, because, if they refuse to supply the big jobbers with barb, they would have a difficulty in getting their supplies at all.

Volume of Trade.

The volume of trade has been fairly well maintained in recent years, but is largely confined to the finer qualities in small quantities, and there has been no increase at all proportionate to the enormous expansion of the world's wire trade. I have taken out figures of my orders during the last 20 odd years, and I have worked them out in averages of five years in order to trace the growth. You will understand that wire is drawn to any thickness from half inch diameter, down to anything you like, but I am only interested in wire that goes perhaps as fine as No. 30 or 35 gauge, or about the thickness of a hair. I divide the branches of the wire trade into four different classes:—Thicker than 9 gauge, which includes fencing and telegraph wire, the heavy trade of the world, from 10 to 14, which includes wire for barb fencing and other sizes of which large quantities are used, 15 to 19 which will include netting sizes, and 20 to 40 which we may say are the fine wire. The first figures I give you do not include barb wire, or netting, or anything of that kind; they are simply wire that I have sold for any purposes for which wire may be required; 20 to 40 would include mattress wire, a staple size of 0 to 9; the actual tonnage has fallen about 4 per cent. from the five years ending 1883 to the five years ending 1903. From 0 to 9 our average output of wire has fallen steadily, from the years 1883 to the five years ending 1898 to less than one-half of the former quantity. Within the last five years ending 1903, owing to certain special reasons and by attacking new branches of trade, there has been a slight increase. But the broad fact remains that in the heavy branch of the world's trade, which is interesting to the steel maker, because hundreds of thousands of tons of this thick steel wire are sold and consumed every year, the English trade is actually dwindling, while the trade of the world is enormously increasing. When you get to the sizes 10 to 14, where more work is required and a little more refined class of wire, the tonnage has remained constant as nearly as possible. There has been no alteration during the 20 years: 15 to 19 has increased 50 per cent.; 20 to 40 has increased 700 per cent.; netting has increased over 1,000 per cent.

Wire Rope Trade.

Ropes have increased about 100 per cent. and strands about 100 per cent. in the last 20 years. The point that I would like to direct your particular attention to, therefore, is that where you get finer qualities, and wire which does not involve the big tonnages so valuable to the steel trade of the country, the greater increases we show. In a sense, it may be that that is more profitable, but I am not quite sure whether you are so much concerned with that as the enormous tonnages, which, I take it, are of vital importance to the trade of this country, because every ton of wire that I sell, if I can make it out of English steel, means so many more tons of raw material employed. I should prefer to use English billets, but lately I have been using foreign steel. I should be only too pleased to draw wire for wire nails, but that is a trade from which the English manufacturer is practically crushed out.

Fine Wire Trade.

English wire mills at the present time do not go largely into manufacture of the finer textures of wire for such things as wire gauze. The moment you get a trade like wire gauze manufacture, which seems a large tonnage of a particular size of wire, the American and German representatives at once make a dead set at that trade, at prices which would simply ruin us to accept at all. Generally, our customers for fine wire are very numerous, each individually consuming only small quantities. The moment you get an industry using tons of the fine-size wire, it becomes worth attacking. You can see what difficulty there would be for the German or American to attack these little customers all over England: tinsmiths, men who make bird cages, who use bell wire, &c. There is one class of fine wire which we still hold, but with great difficulty, and that is mattress wire. These are made out of wire of a gauge of about 22½, and about 400 or 500 tons a month is consumed in England. The Americans made a great set at that trade, their principle being to find out in London and Birmingham what the Englishmen were quoting and to quote £1 a ton less. That is a form of competition very difficult to meet, but at the same time we have been able to hold a substantial share of that trade, but the price is, I am sorry to say, very bad. There is, of course, a great advantage in our favour in the terms of doing business. The American terms are "cash against documents." A big mattress maker using 10 tons a week will buy his 50 tons and pay cash, and will, perhaps, not pay so promptly in other directions. When he comes to me I give him a month and six weeks' credit, but he takes it as he wants it, fresh tinned from my mill. He has two tons at a time, or half a ton when he wants it. I keep his stock, and I give him credit. The effect is a small man will always have that great temptation to come to me and as long as there is not more than, say, 15s. a ton difference, he will deal with me.

Canadian Hardware Association.

The Canadian Hardware Association includes every large jobber in the country—they are all members of the Association—and they approach the American and Steel Wire Company, or rather it is now the United States Steel Corporation, and they settle with them at the commencement of the season the price at which they are going to buy as an Association, and the whole Association enter into an agreement to buy from the Steel Corporation, with a guaranteed profit of 10 per cent. A distributor does not care a rap what price his commodities are going to be sold at. He would pay £50 a ton for wire if he could get a proportionately increased profit, and if the United States Steel Corporation come to them and say, "We have got plenty of barb; you may have it despatched as you please; everything will be made as convenient as possible; you need not handle an ounce; we will consign it direct to your customers according to your instructions; and on the top of that we will guarantee

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you 10 per cent. profits” I do not know whether the farmer is materially injured. The difference is very small. Four or five years ago, when the wire trade and other trades in this country were booming, the price of galvanised fencing wire was about £12 10s. a ton: everybody paid it, and they were perfectly happy, and there was no grumbling. On the contrary, there were more orders than we knew what to do with. At the present time, when the price of galvanised fencing wire is about £8 10s., nearly 30 per cent. less, it is all we can do to keep the mills going.

909 When a man takes up a large quantity of new land and requires a considerable amount of fencing wire, he is unable to purchase direct from me because the large houses whom I supply would hear of this transaction and withdraw their custom. The consequence for me would far more than balance the small advantage of the sale. In Australia where nothing of the same sort works and where they are putting up thousands of miles of wire fencing for two or three months I sent a considerable amount. **Direct Purchase Impossible.**

910 With regard to the changes in business, I may say that the proportion of the export trade done with the Colonies is continually increasing, while the amount sent to foreign countries is falling off, and, with the exception perhaps of the Argentine, is altogether negligible in proportion to the whole. In 1901, these other countries took 9 per cent. of our whole export trade, in 1902 it had fallen to 7 per cent. and in 1903 to 5 per cent. Argentine is enjoying a period of great prosperity, and they are taking a very large amount of wire for the purpose of fencing new land. Our trade has increased from 4 per cent. to the whole in 1901, to 9 per cent. in 1903, but at any moment the trade with Argentine may fall away. The United States Steel Corporation sent large quantities of wire to the Argentine, and that tends to increase also. It is common knowledge, however, that the United States have not been pushing the exports of their steel manufactures so much during the last few years as they did previously, and as they may do in the future. During that lull of pressure from the United States, our exports to the Argentine have undoubtedly increased. The Colonial trade has increased from 23 per cent. in 1901 to 33 per cent. in 1903. I think these figures will be typical of the full wire industry of the country. **Wire Export Trade.**

911 Net profits in the wire trade have diminished very much in proportion to the turnover and output, although they have fluctuated with the condition of trade. It is the common classes of wire which have become specially unremunerative. At the same time the world's trade in common wire has enormously increased in volume. The exports of wire and nails from the United States increased from 20,000 tons in 1893 to 151,000 tons in 1903, while from Germany the exports of wire and nails in 1899 were 206,000 tons, and in 1901, 302,000 tons. The total exports of wire from Great Britain have remained stagnant for many years past at about 50,000 tons. The net result is that at the present time Germany and America are together exporting something like 500,000 tons, while England is exporting about one-tenth of this or 50,000 tons. The Americans and Germans have steadily increased while England has remained stagnant. **Wire Trade Profits.**

912 Common classes of wire have, in face of foreign competition, become unremunerative. Broadly speaking, it is impossible for English manufacturers to take orders for solid fencing wire in competition with the foreigner. The world's trade in common classes of wire has enormously increased in volume, as is shown by the exports from Germany and America. The exports of wire and nails from the United States increased from 20,000 tons in 1893, to 151,000 tons in 1903; while from Germany the exports of wire and nails in 1899 were 20,000 tons; in 1900, 216,000 tons, and in 1901, 302,000 tons. The total exports of wire from Great Britain have remained stagnant for many years past at about 50,000 tons. Employment in the wire trade has been fairly steady. **Common Wire Trade.**

913 England is the home of the wire trade, and up to the German war, the whole of it was in our hands. As we cannot export wire at the price at which the Germans can export wire, if they sell nails at the same price as wire, still less are we able to manufacture and sell nails. **Wire Nails.**

914 About 1884 the Germans were making a great attack upon the Colonial market, and they were offering their wire at about £2 per ton below the English prices, according to their custom, but the Australians refused to have anything to do with them, because they had used English wire all the time, and they liked the English wire. Probably the first lots of German wire were badly rolled, badly varnished, and badly galvanised, and they did not like them, and they preferred to stick to the old firm—England. Formerly we used puddled iron for drawing wire, then it changed to low carbon basic-Thomas steel. By employing steel, we were able to draw a very much larger piece, and draw it down very much further without breaking. The result was that it was much easier to draw, and the masters wanted to have a corresponding reduction in the wages in proportion to the extra ease of drawing it, and the greater weight of piece. The result of that was a dispute and a strike, and the English manufacturer could not fulfil his orders. The Australians were compelled to buy German wire in order to fill their requirements, and found that after all German wire was very similar to English wire in most of its characteristics. A large proportion of the Australian trade was lost to England, and we have never got it back. **Improvement in Wire-Drawing Methods.**

915 Many merchants in Australia prefer to buy English wire. There is a certain amount of sentiment. I believe English wire is better, but for fencing purposes I cannot help thinking that any ordinary wire would do. The consumers in New Zealand believe in English wire. They like to buy English goods, and for English goods they are willing to pay higher prices. That is one of the special cases where we can get orders for common wire indented home. It is the customer himself who decides whether German wire or English wire is to be bought. The German price for fencing would run always from 15s. to 20s., per ton below the English price as a general rule, but the Germans always undersell, whatever the price is. I have no special observations to make on the Cape different from those made on other Colonies. Roughly speaking, German competition began to be experienced between 1880 and 1890. American competition between 1890 and 1900. **Colonial Experience.**

916 The freights from Antwerp and New York to Australia are from 10s. to 15s. per ton lower than the freight from Liverpool or London. The cost of carriage of goods, both in America and Germany, is considerably less than ours. I consider that, in addition to being penalised by sea rates, we are also penalised by the high English railway and canal rates. I can get large f.o.b. shipments by canal at slightly lower rates, but it is not anything like so convenient. It means extra cartage, and a certain amount of risk of damage, owing to bad weather in transit. Wire is rather easily injured by bad weather, and I always prefer to send by rail. In large quantities, I do sometimes send down by board, and I get on board for a little bit less, but the charge of 3s. 6d. f.o.b. Antwerp, will include all charges. I have frequently heard it stated that the Government have actually carried goods on railways for nothing at all, and on a through bill of lading from the works through to the port of destination. **Sea and Canal Freight Rates.**

Witness No. 15
—continued.

**Loss of Heavy
Wire Trade.**

In substantial lines, running into hundreds of thousands of tons, British trade has been practically destroyed, except in a few markets where indents are still sent home for English wire, for reasons, no doubt, connected with quality. Where the English manufacturer is in competition with Germany or the United States in common classes of wire, the Englishman is invariably under-quoted from 10s. to 20s. per ton. My information is that the bonus on the exportation of rods and billets is 15s. per ton, or rather more than the cost of carriage from the German works to Birmingham, Yorkshire, or Warrington. That is confirmed by your memorandum on German kartells, where it is stated that the manufacturers of iron and steel were receiving 15 marks a ton on one half of all the materials purchased by them. Thus these bonus goods are transmitted carriage free.

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Export Bounties.

Since writing what immediately follows, I received this memorandum, and I read paragraph 6 on page 7: "The policy of granting bounties on export is only a part of a general system of fostering the export trade by syndicates, in order to reduce the stock on the home market. The sales abroad are effected at a price below that charged on the home market, and sometimes at a price much below the cost of production." That is drawing attention to the fact that they have got free carriage with the help of the bounty, and then on the top of that, a sale below cost, which carries us a little bit further than my observations here go. The large manufacturers, therefore, in Germany, who produce the finished or partly finished article from the earliest stages of the raw material, are able, with the help of their kartell, to deliver their products in England at the cost at their own works, the bonification covering cost of carriage. Thus we find billets at the present time being imported from Germany at prices lower than the English manufacturer can accept. The price of German rods is about the same extra over the billet as the cost of rolling in England, and common wire at about the same extra over the rod as the bare cost of producing drawn wire over the rod in England. It is thus evident that even for delivery in England, the Germans, where they are prepared to do so, can supply the English consumers with their requirements of wire at prices lower than the English manufacturers' cost at works. So, too, in competition for the foreign trade, as the cost of carriage is less than when the wire is delivered in England: the German manufacturer can send his goods f.o.b. Antwerp at a price even further below the English manufacturers' costs at works. A good instance of this is the case of fencing wire, which is constantly offered f.o.b. Antwerp, at about 6s. per ton above the cost to the English manufacturer of imported German rods—his raw material. It will thus be seen that, so far as the common trade is concerned, it is absolutely impossible for the English manufacturer to hold his own, and this part of the trade exists purely on sufferance. From the statistics, therefore, given above, it will be seen that, although the world's fencing trade has enormously increased, this branch of the British trade has, owing to an unfair system of competition, almost vanished.

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Nail Trade.

The result of hostile tariffs, coupled with the considerations in the last answer, quite account for the fact that the export wire trade to foreign countries is practically non-existent.

By the good prices foreigners are able to obtain in the home market, they undoubtedly are able to improve the efficiency of their production, and at the same time are able to cut their prices more keenly for export, in order to secure a larger turnover.

England being a large consumer of wire is, geographically, an extremely convenient market for the German wire manufacturer, in which he is able to place large quantities of wire at the least possible expense.

On this question, I might say that a few weeks ago I was informed that the price of nails for delivery in England was 15s. a ton higher than if bought for export anywhere else. The nail trade in England is killed. The cellars of the large distributing merchants are stocked to the roof with nails. They are sold in this country by the German Wire Nail Syndicate. Even if the price became remunerative, I should not spend the money that was necessary to put down nail making plant, because at any moment the price might be dropped, and all my plant would become scrap. Trading upon that fact, I am informed that, the English trade having been destroyed, the Germans and Americans together arranged to charge 15s. a ton more for nails for delivery in England than for shipment to a foreign market.

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In my view, fair competition would result in the case of Germany, from a countervailing duty exactly equal to the advantage which the German manufacturer is deriving, either from an actual bounty in the form of a bonus from the Trust or otherwise, or a preferential rate of freight by shipping lines, Government railway, &c. In the United States the case is rather different, and perhaps a similar rate of duty to that imposed by the United States upon imports of wire and wire manufactures, might be a fair method of meeting the case. I put that forward, of course, with every deference.

Import Duties.

It is difficult to suggest any particular rate of duty at the present time without taking into account the variety of interests in the wire trade. This could only be arrived at in an exhaustive inquiry into the relations between the various trades. A moderate duty, not nearly so high as the duties imposed in foreign countries, would be an appreciable advantage to the British manufacturer. If, instead of our being down to the bone in everything we sell, whether it is for home or abroad, were there the very slightest little bit at home to help us, we could do what the Germans do, and it would strengthen us in selling at a lower price abroad. A small duty would undoubtedly help. But, of course, there is the other point to which I think the Commission would probably give great consideration, and that is the large importation of wire into this country. The pity of seeing all this wire coming into this country, the importation of which has been fostered by the unfair system prevailing abroad—wire which might, and ought, to be made by the English wire drawers, is a matter which I am sure the Commission will be interested in. If there were sufficient demands, there would certainly be no difficulty in procuring more workers. No doubt, one of the troubles which the English wire manufacturers have, is their difficulty with their men. In saying that, I do not want to suggest that the rate of wages has caused us to lose the heavy trade to which I have referred, because to say that would be extravagant. I may say that the whole cost in wages of drawing, say, No. 8 fencing wire, is 3s. 2d. a ton, and suppose that was drawn for nothing, it would not seriously affect the question. But we have been undoubtedly hampered by having to deal with a trade union which is of the most conservative and arbitrary type, making rules as to the number of apprentices, and rules as to how many blocks they will handle, and how much work they will do, and the rest of it. Of course, a man by setting his plate badly can very easily make bad wire, and I daresay you can understand the great difficulty we may have in dealing with a trade union under such circumstances, which is determined not to give away anything more than it can help; now the fact that the English wire trade has not developed as it should, has strengthened the hands of these men, because the master is really between, as I might say, the devil and the deep sea. On the one hand, if he insists on his men changing their methods, with a view of slightly reducing the cost in certain directions, he would run the risk of a strike such as we had in 1884, and the result would be that a large amount of this trade which we still do on sufferance, would be gone—lost altogether. On the other hand, the conditions of labour in this country are not satisfactory. The rate of wages per ton is too high, and the trade is hampered and made more difficult by the restrictive policy of the trade union. Supposing, however, the demand upon the manufac-

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turers increases, and they called upon the wire drawers' union for more men, and they could not find them, they would then be in a position to put down an unlimited number of apprentices, and gradually alter the whole system in a perfectly natural way. And that is what would happen. If I had a demand upon me for 50 per cent. more material, I know very well what I should do, and I have now doubt that I should be able to do it. I can give an instance in order to show what can be done with the wire drawers if taken in the right way. But first I ought to tell you that a cardinal principle with the wire drawers is that they must not have any unskilled labour at the wire drawing block at all. They must be all skilled men, and you must pay them the trade union rate of wages, and so on. The manufacturers say that if you had skilled men to do part of the work, and unskilled men to do part of the work, they would get the work done equally well, and at a less cost, and I believe that is so. But that is their first rule—that they will not have any unskilled labour at the block—they will resist this to the utmost. Well, I made a large quantity of netting, and a great deal more netting than ever I did. Now it has always been a very annoying thing to me to buy netting wire from Germany. I used to buy a very great deal of netting wire from Germany, because, for one thing, I had not got the means to produce it; and, on the other hand, the price at which I could buy it was generally below my cost of production, and it was not worth my while putting down plant.

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With regard to my views as a manufacturer on the agricultural situation, I should say that if your question involves the recent proposals of Mr. Joseph Chamberlain, that, as a manufacturer, I am most strongly in favour of Mr. Chamberlain's proposals. There may be a great deal to be said from an agricultural point of view as to putting a duty on corn in order to stimulate agricultural products, on the ground that agriculture is one of the greatest of the British industries, and that on that ground it is a pity to see it crushed out. That, however, is a question for the Commission and for the agriculturists, and with which the manufacturer, as such, has no concern. In the abstract, of course, the manufacturer would naturally say, "All things being equal, we would always rather have food brought in cheap, and if there was no reason against it, we would say, by all means let us have corn in for nothing." But if good ground was shown, I certainly—even in the abstract—would not oppose a duty, if it was proved to be just, and on broad lines. But supposing we can go to a market, I do not care what market it is—Argentine, for instance—and say, "Now you send out an enormous quantity of wheat to us; we will give you a preference of 2s. or 5s. on your wheat if you will give us a preference upon our barbed wire," I should say that is a business transaction, and I am in favour of it. I would like to make one observation, as I do not want any misconception on this point. I have come here to give evidence, and not to pray for any indulgence, and if on the facts you think protection is right for the home market, I would quite agree with you. I have told you that enormous quantities of wire come into this country, and the English manufacturer cannot take it, owing to the peculiar conditions of competition. If you think it is better for the country, it should remain as it is, of course, you will see it from another point of view. What I deplore is that this Colonial and world demand for wire, which is an enormous demand, we can hardly touch, and that the heavy trade, which is so valuable to the iron and coal producers exists simply on sufferance, owing to peculiar conditions, which, I take it, you are especially anxious to investigate and, if possible, to secure a remedy for.

**Views on
Agricultural
Proposals.**

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The result of an imported duty would, undoubtedly, moderately affect prices. The duties contemplated would, no doubt, be moderate, and I do not think that the small advance in prices would have any detrimental effect. My experience has always been that when prices are high, people buy heavily, and trade is prosperous all round. About five years ago, at the time of the boom in the iron and steel trades, the price of wire was £5 or £6 higher than it is to-day. At that time, consumers were prepared to pay the price without a murmur, and there can be little doubt that at that time there was great prosperity, and more general well-being than there is to-day, when the prices of wire and other things are about one-half of what they were then. There is among the public an exaggerated idea as to the effect such an import duty would produce. But I would suggest that the price of foreign wire being, let me say, £1 a ton below the price of English wire, then if you put on a duty of £2 a ton, if that increased the foreign price £2 a ton, or let us say from £6 5s. to £8 5s., and our price was £7 5s., we should have to get inside £8 5s. to still keep within the price quoted by the foreigner. If we are to get the trade, the price must only be advanced £1. The truth being, as is so often—just at the middle point—that, while prices would no doubt advance, they would not advance to the extent of the duty; they would advance somewhere about half-way; so that while we were keeping a lot of wire out, we should be doing the trade ourselves. I am sure you would not wish to disguise the fact that if there was a duty placed upon any commodity in England, you would just be getting those inducements for arrangements which are the basis of the arrangements made in Germany and the United States; and if you got a tariff that gave anything like protection for English manufacturers, you would at once get the manufacturers putting their heads together to moderate that competition, so that, while, as I say, prices would not be raised to the extent of the duty, they would prevent, by undue competition, the manufacturer losing the whole of the benefit of the duty which they might, under the new conditions, obtain. So that I think you ought to take it that in practically any branch, prices would advance. On the other hand, when you consider what is stated in those two memoranda with reference to the German kartell system, and the United States Industrial Commission, and when you remember that Mr. Schwab, in the evidence given before the Commission on Trusts in the United States, admitted that wire was sold abroad at prices considerably below cost; and when you have it admitted that under the German kartell system—and admitted by people whose interests would lie in not admitting it, so that the tendency would not be to exaggerate, but to minimise—they lost heavily on the export trade; that they sold actually at £1 a ton loss, then, I say, if it is so important to them to sell, and if their general practice has been in the past to find what the English price is, and then sell at something lower, you may be quite sure they will do everything they can to get in under the new conditions, and will, by still further reducing their prices, pay a large part of the duty.

**Effect of Duty
on Prices.**

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With an increased production in this country, we should be enabled to produce at rather less working cost than at present. You will understand that the standing charges per ton in a purely wire industry, such as we have in this country, are heavy and under different conditions could be greatly reduced. In Germany and the United States, the large wire firms are simply branches of the large steel firms. For instance, the Phoenix Company in Germany own their own mines, and they produce their wire simply as a vehicle for getting rid of steel. Then, in the case of the United States Steel Corporation, the American Steel and Wire Company is simply a branch of that concern, and they produce the wire from the iron ore and spelter mines which they themselves own. In England, owing to the throttling which the industry has always suffered from its earliest times, we have never been able to do that at all, and though these industries have grown up—and they are important industries in a sense—they are still relatively to those enormous corporations abroad, very insignificant. We have never, so far, been able to grasp the whole industry into one corporation. The furthest we have gone has been to include the

Reduced Cost.

Witness No. 15
—continued.

billet—where you buy the rolled billet from the outside. Now this is a peculiar condition of the English wire trade, and there has thus always been a point below which we cannot, under any circumstances, go, whereas the Germans and the Americans can go right down to the earliest stages of the raw material, and, if necessary, almost give it away. Though at present I buy German steel, it would suit me very much better to give more for my German steel, if I could get more for my wire. Supposing I were a branch of a steel works, and not simply a purchaser of the steel works product, it might very likely pay a steel works to work my concern as a vehicle for selling steel. That is, I take it, the way the United States and the Germans regard this wire. This thick wire which is sold by hundreds and thousands of tons, is a vehicle for getting rid of steel which they cannot sell in rails or girders, and if my firm were part of a steel works, the conditions might be quite different.

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Colonial Preference.

My experience of Colonial trade preference is hardly sufficient to enable me to speak definitely upon this point. The tariff, in regard to which a preference has been in operation, omitted all those common classes of wire to which I have referred. I have no doubt whatever, that the wire trade has benefited, but not as much as might be conceivable under systems of preference which would include common classes of wire, as well as the more refined.

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Decimal System.

There can be no doubt that the introduction of the decimal system would be of assistance to manufacturers. The difficulties in the way of its introduction are, however, many and obvious. There is considerable confusion about the gauges under which wire is sold. The imperial wire gauge obtains more than any other. In England and the Colonies they always go by the imperial. In America a great deal of business is done on the Brown and Sharp gauge. On the Continent they sell on the millimetre gauge.

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Security for Capital.

The only other point I should like to express an opinion upon is this. I am pleased to think that my Company is a very live Company, and we hold our own fairly well as things go—but it is a struggle. My Company has behind it men who have money. The temptation, or otherwise, to put money into a company must, naturally, depend upon the prospects of a return. I instanced the case of a nail trade just now as one where there would not be security for capital. And supposing nails could be sold at the present time, owing to the price of nails going up, so that one could make a profit of £1 a ton upon nails, still I should never dream of putting down a nail-making plant and inviting my friends to put money in it. But suppose that increase of profit was the result of certain fixed conditions that enabled you to forecast that there would be a probability that you would make that profit in the future, then I would, of course, put down the necessary plant, and employ the necessary men, and do the business. So it is with the wire trade. A gentleman asked whether we could find the men to produce the increased quantity of wire. As to that, I should say the labour question presents no difficulty; but under the existing conditions you could not possibly get the money. Unless there is some security for business, it is impossible to expect people to put their money in it. It is a reproach sometimes to the English manufacturer that he does not keep up to date; that he does not put down new plant, and so on; and we hear wonderful stories about Americans scrapping plant and expending millions of pounds in betterments. But if works are run on very close lines, and only make small profits, and sometimes losses, such a policy is impossible.

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Witness No. 16.

WITNESS No. 16.

BRITISH IRON TRADE ASSOCIATION.

The following statement was submitted to the Commission by Mr. J. STEPHEN JEANS, Secretary of the British Iron Trade Association:—

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I.—GENERAL STATEMENT AS TO EXTENT AND VALUE.

Extent and Value of Iron and Steel Industry.

1.—The British Iron Trade Association was founded in 1876 to act on behalf of the iron and steel trades in all matters affecting their commercial interests, to attend to all Parliamentary matters, and to procure and circulate statistical information as to the cost of production and prices at home and abroad, excluding all purely local matters, and questions relating to rates of wages. The Association has prepared and presented evidence before a number of Royal Commissions and Select Committees, including those on Railway Rates and Regulation, on Coal, on Food Supplies and Raw Materials in Time of War, &c. It has also issued its own Commissions to enquire into the Conditions of the Continental Iron Industry, and into the Economic Conditions and Competition of the American Iron Trade. At the present time, it is having a Report of considerable extent prepared on Canadian Industrial Resources and Possibilities, founded on information obtained by its delegates at the Imperial Commercial Congress of last year.

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2.—The British Iron Trade Association having appointed me to give evidence before this Commission, I may explain that I am not instructed to put forward any views or to express any leanings favouring any particular attitude on the fiscal question, but I should state that last year I was authorised to issue blank forms to our members, in order to ascertain their attitude in reference to the general subject, and the replies made thereto showed that nearly 95 per cent. of our members making returns, representing more than 70 different iron and steel manufacturing establishments out of 225 embraced by the Association, took the position that some reform of the existing situation was necessary, although hardly any suggestions were made as to what the precise character of that reform should be.

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3.—It is due to the Commission that I should further state that for 27 years it has been my duty to collect statistical details of the iron and steel industries in all parts of the world, which have been published in the form of an annual statistical report to our members; that I have visited and inspected the leading works in the principal iron-making countries, including the United States, Germany, France, Belgium, Austria, Spain, Sweden, and Canada; and that for 16 years I edited and produced the volumes of "Proceedings" of the Iron and Steel Institute, which presents the technical side of the iron and steel industries, as distinguished from the commercial side represented by this Association.

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4.—The ultimate value of the products of the iron trade is greater than that of the products of any other manufacturing industry. The total volume of the world's output of pig iron in 1903 may be taken at 43 million tons, worth probably an average of £3 per ton, or 129 millions in all. The total output of steel may be taken at 36 million tons, worth on an average probably about £10 per ton, or 360 millions in all. In these figures I include the steel used in heavy machinery, but not that employed in tools, hardware, implements, ordnance, and many minor uses, which would probably bring up this figure to over 430 millions sterling. I regard this figure as well under the mark, and am supported in this view by the fact that the American census figures record the average value of the steel produced in that country in 1900, as over £8 per ton, without taking any account of the increased value given to it by secondary applications.† There remains the value of finished iron products, and steel produced by crucible and other special processes, which cannot be taken at less than 70 millions sterling, so that the total value of the world's finished iron and steel industries may be taken at approximately 500 millions sterling. The capital embarked in this industry, adopting the United States standard, as disclosed by the census of 1900, may be taken at 110 millions for steel works alone, without counting blast furnaces, foundries, finished iron works, crucible steel works, engineering, ordnance and electrical works, shipbuilding yards, and many other plants and factories in which iron and steel are worked up into more highly finished products. But the present nominal value of the world's iron and steel plants is very much greater.

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5.—So far as the British iron and steel industry is concerned, I have computed in my statistical report for 1902, issued to the members of this Association (copy handed in), that the ultimate value of the trade in that year was about 139 millions sterling, but this included an estimate—necessarily very largely conjectural—of the value of the more minute applications which have been omitted in the figures above presented. Of this sum of 139 millions, approximately one-half took the form of exports and one-half that of home consumption. Comparing 1902 with 1883, the value of our exports of iron, steel, machinery, cutlery, &c., has advanced from 48 to 60 millions in round figures. For the same two years, production compares as under—in tons:—

Production of—					1883.	1902.
Pig iron	..	..	..	..	8,490,224	8,586,693
Puddled iron	..	..	..	..	2,730,504	998,278
Open hearth steel	..	..	..	..	455,500	4,100,000
Bessemer steel	..	..	..	..	1,553,380	1,780,000

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6.—These figures show that during this interval of 20 years, while there has been but little change in the output of pig iron, subject to fluctuations in intermediate years, there has been an advance of over a million tons in the output of finished or semi-finished material. The most pronounced features of this movement have been a decrease of nearly 1½ million tons in the output of puddled iron, and an increase of about three million tons in the output of steel. The concurrent course of the German iron industry in the same period has been as shown in the following figures:—

Production of—					1883. Tons.	1902. Tons.
Pig Iron	..	..	..	..	3,680,806	8,517,693
Puddled Iron..	..	..	..	..	1,586,154	988,278
Steel	..	..	..	..	1,074,806	4,849,067

For the United States, the changes during the interval are shown in the next set of figures to have been—

Production of—					1883. Tons.	1902. Tons.
Pig Iron	..	..	..	..	4,695,000	17,821,307
Puddled Iron..	..	..	..	..	2,349,000	not stated.
Steel	..	..	..	..	1,655,000	14,994,200

To prevent misunderstanding, I should add that the decline of the finished iron, and the advance of the steel industries have been common to all countries over this period, although owing to our having reached the highest development at the date when the changes in question began we have suffered more than any other country by their operation. †

1A.—IRON ORE CONDITIONS AND SUPPLIES.

(a). BRITISH ORES.

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7.—It seems to be necessary, in order to have an intelligent appreciation of the situation in the British iron industry, that the principal facts as to the resources and conditions, both of our own and of other competitive countries, should be put on record.

**British Ore
Conditions.**

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8.—The iron industry of Great Britain was mainly founded on ores mined in South Staffordshire, South Wales, South and West Yorkshire, Shropshire, and Scotland, although relatively considerable quantities were also mined in the North-East and North-West of England.

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9.—It may almost be said that the whole of these earlier workings have been entirely exhausted or discontinued from inability to pay, although certain quantities, which tend to get less year by year, are still mined in Staffordshire, South and West Yorkshire, and—to a larger extent—in Scotland.

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10.—The British iron industry of to-day, in so far as it depends on home ores, is fed mainly from new sources of supply; that is to say, sources that were not operated, or only worked to a very trifling extent, 60 years ago.

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11.—The more important centres of these new supplies are Cleveland, West Cumberland, Lincolnshire, Northamptonshire, Derbyshire, Notts, Leicester and Oxford shires. The united production of these several sources of supply may be taken at over 11 million tons a year, of which Cleveland supplies about one-half.

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12.—Practically the whole of these ores, except those mined on the North-west Coast, are of poor grade not averaging much over 30 per cent. of iron. The ore mined on the North-west Coast runs up to nearly 60 per cent., although averaging a good deal less, and is, unlike the others, an ore of notable purity, having but little sulphur and phosphorus.

13.—So far as the Cleveland district and the other districts furnishing lias or kindred ores are concerned, there is a vast reserve still available, although the grade has for a number of years past been declining and is likely to continue to do so. A short time ago a member of the well-known Pease family computed that the best ironstone in this region would be exhausted within 16 or 18 years, and that the district, in so far as it depended on local ores, would then have to use the shale ironstone, which would mean dearer and lower grade supplies. Nevertheless, the total quantity of ironstone left in the Cleveland hills is not likely to be exhausted within the next two generations, if ever exhaustion in the true sense of the term should overtake the district. The problem of the future will be—At what cost can low grade ores be worked at a profit in competition with the other ores then available? To this question no adequate reply is at present possible. Vast areas of ironstone bearing lands in North Yorkshire have hardly as yet been exploited. Over a large part of the district known to contain ironstone, although of low grade no railway facilities have yet been provided. So large is the total area of ironstone lands that the original reserve was computed as far back as 1850 at between 4,000 and 5,000 million tons. Up to the present time the total quantity worked has been between 220 and 250 million tons. The great bulk of the remainder will probably never defray the cost of working, but that is a question that must be judged in relation to other circumstances, of which at present it is only possible to form a very imperfect idea. As with the Cleveland district, so, *mutatis mutandis*, with the other iron-making districts.

14.—Great changes have lately taken place in the sources of our home supplies of ore. The Cleveland district, first opened about 1850, has for the last 12 or 15 years supplied more than a third of our total home output. The output of Scotland has fallen to only about a third, and that of Staffordshire and South and West Yorkshire to less than a fifth of their former maximum, while South Wales has virtually dropped out of the home ore business entirely, and now lives entirely on imported ores. Of other districts that have come more prominently to the front during the last 20 years, Lincolnshire, Northamptonshire, Leicestershire, Oxfordshire, and Nottinghamshire are entitled to notice. These five districts, added to the Cleveland district, produce ore of a cheap and low grade character, the percentage of iron ranging from 28 to 35, and the calcined material, as charged into the blast furnaces, ranging from 40 to 45 per cent. of iron.

15.—There are in the country 10 districts engaged in the production of iron and steel, ranging from Scotland in the north to Northampton in the south and Glamorganshire in the west. Of the blast furnaces, not more than one-half have on an average been in use for a good many years past. Those that have not been employed are for the most part old and dilapidated furnaces, which are of little or no value except as scrap. The maximum number of furnaces that can be used with commercial success at any one time may be taken as 400, that being the average of the year 1900, when the conditions of trade stimulated production to the utmost.

16.—The ironstone required to produce a ton of pig iron in Cleveland, Northampton, Lincolnshire, or Staffordshire, will not cost more than 12s. at pit or quarry, to those who have their own mines—as the majority of pig iron makers have—whereas, in Westphalia, the ironstone of Lorraine or Luxembourg, which represents two-thirds of the total supply, will cost about 25s. per ton of pig at the furnace, against a fuel cost which should not much differ between the one country and the other, seeing that in both cases the coke is usually made at distances ranging from 18 to 30 miles from the furnace plants.

17.—In the Cleveland district the ore is of a soft nature and easily mined; it averages from 31 to 32 per cent. of iron. Some of the mining is surface work, but it is mainly pits. A miner can mine easily 5 tons a day, working eight hours, for which he gets 10d. a ton. In very rich seams they mine as much as 6 to 7 tons. The employment is very regular, and 4s. a day is about the average for pretty nearly the whole year at the present time.* The wages would be the same in bad times, too, with the difference that the men would then have only four to five days work a week. The differences in the labour cost of pig iron making are caused principally by the quality of ore, the richer ores naturally requiring less wheeling, &c., to the ton of pig iron.

18.—The total consumption of iron ore in British blast furnaces in 1902 has been 20·3 million tons, which compares with 36·4 million tons consumed in the United States, and 19·0 million tons consumed in German furnaces. These figures, with the corresponding production of pig iron and the average consumption of iron ore per ton of pig, are set forth in the table that follows:—

		Total ore consumed. Tons.	Make of pig iron. Tons.	Average of ore per ton of pig. Tons.
Great Britain	..	20,305,369	8,586,000	2·37
United States	..	36,484,135	17,821,000	2·04
Germany	..	19,052,930	8,530,000	2·23

19.—The imports and exports of iron ores in 1902 from the same countries included in the above figures were as under:—

			Imports. Tons.	Exports. Tons.
Great Britain	..	..	6,439,757	—
United States	..	..	1,165,470	88,445
Germany	..	..	4,370,022	2,389,870

(b) THE IRON ORES OF THE UNITED STATES.

20.—The total output of iron ores in the United States in 1902 was 35·5 million tons, and nearly a million tons additional was imported, mainly from Cuba. Twenty-one and a quarter million tons, or 74 per cent. of this quantity, was raised in the two States of Minnesota and Michigan, on Lake Superior, a thousand miles more or less from the centres of pig iron and steel production. Of the remainder, 3·5 million tons were raised in Alabama, and 1·8 million tons in the Virginias and Tennessee, so that only about 10 per cent. of the total home supply was raised elsewhere. The States of Pennsylvania, Ohio, and Illinois, which produce about 70 per cent. of the total pig iron output, produced unitedly less than 3 per cent. of the total output.

* The Tariff Commission is informed that each day worked by a Cleveland miner for several years past has resulted in his making the following wages:—1890, 5s. 10d.; 1900, 6s. 11d.; 1901, 6s. 1d.; 1902, 5s. 9d.; 1903, 5s. 10d.; 1904, 5s. 8d. per day.

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21.—The most remarkable feature of the iron ore supply of the United States is its concentration in one region, and the distance of that region from the centres of iron production. This, however, has its counterpart in the cases of Great Britain and other countries. Our own country imported in 1902 6·3 million tons of iron ore from foreign countries, and 98,485 tons from five British Colonies, while Germany drew 4·3 million tons of iron ore from an almost equally wide range. We shall afterwards see that distance plays a less important part in the case of the United States than in that of other countries, owing to the cheapness of transport.

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22.—The only district in the United States which draws mines ore supplies largely near to furnaces is that of the South—Alabama, the Virginias, and Tennessee. This region raised in 1902 about one-half of the quantity raised in the neighbourhood of smelting plants in Great Britain. The Cleveland district (G.B.) alone produces a larger ore output than the whole of the Southern States.

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23.—The average iron content of the Lake Superior ore has been variously computed at 55 to 60 per cent. The average of home British ores will not exceed 38 to 40 per cent., but the average is raised by imports to probably between 40 and 43 per cent. More than one-half of the total iron output of the United States is produced from so-called Bessemer ores. The same class of ores available for the British iron industry is about eight million tons annually, including West Coast ores and imports, and this will represent nearly four million tons of pig iron, or well on to one-half of our total iron output.

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24.—The Lake Superior ore region alone produces about three-fourths of the tonnage of iron ore mined in the United States. If regard be had to the actual content of iron rather than to the gross weight of the ore, the proportion would exceed three-fourths, which means that over three-fourths of the pig iron made in the United States is from Lake Superior ore, imports being neglected. Where ore is mined elsewhere in the United States, it is mainly because the contiguity to blast furnaces and fuel makes it economical to mine it, although generally of low grade.

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25.—The United States Steel Corporation, formed early in 1901, capitalised its vast body of ores at about \$1·00 per ton. This gave the merchant ore producers the cue that they should continue to receive high prices for their ore. Now the Steel Corporation has failed to pay dividends on \$510,000,000 of its common stock capitalisation, and there is a question whether it can continue to pay dividends on the \$358,000,000 preferred stock remaining, which brings up the vital question whether ore is still worth the high figures recently prevailing, or should drop back to the more moderate prices ruling in 1899 and preceding years. On this hangs the general question of the approximate cost of making pig iron and steel in the United States for the next few years. It now costs the merchant furnace somewhere between \$12 and \$13 to make a ton of Bessemer pig, paying \$3·50 to \$4·50 for ore.

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26.—Within recent years American ores have generally appreciated in value. It is reported that Lake Superior properties, which certain insiders bought two or three years ago for \$500,000, have been resold at a valuation of \$5,000,000. There was a vast accretion in value of Lake Superior properties in the five years following 1895, when the big Carnegie purchases were made. Some of these properties were not considered as having any market value at all six or eight years ago, being non-Bessemer, and running below 60 per cent. in iron.

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27.—The following table shows approximately the prices of standard old range Bessemer ores since 1894, and of Mesabi Bessemer since the latter became a market commodity. The gradual decline in price to the latter part of the nineties is due very largely to improved methods of mining and decreased lake freight rates, all Lake Superior ores price being made by the producers f.o.b. at lower lake ports—Cleveland, Conneaut, Erie, &c., which are within a 160-mile haul of Pittsburgh:—

Season.	Old Range Bessemer.			Mesabi Bessemer.		
			Dols.			Dols.
1894	..	..	2·75	..	..	2·50
1895	..	..	2·90	..	..	2·25
1896	..	..	4·00	..	..	3·25
1897	..	..	2·65	..	..	2·40
1898	..	..	2·75	..	..	2·15
1899	..	..	2·95	..	..	2·25
1900	..	..	5·00	..	..	4·40
1901	..	..	4·25	..	..	2·75
1902	..	..	4·25	..	..	3·00
1903	..	..	4·50	..	..	4·00

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28.—In the older ore fields the ore was got by digging into the bowels of the earth, and bringing the material up from a greater or less depth. But in more recent years the latest and now the most important of the fields has given opportunity for the simplest and cheapest form of mining: great bodies of ore are lying close under the ground, and, when once the surface glacial drift has been removed, are got by simple digging and shovelling, as from a clay pit. Along the Mesabi range of hills, lying about one hundred miles north-west of the end of Lake Superior, vast tracts of rich iron ore, finely comminuted and easily worked, lie close to the surface. Here a new source of supply was added, offering unique opportunities for exploitation on a great scale. The Mesabi field at once sprang into the front rank among the Lake Superior fields, and, indeed, among all the iron ore fields of the world. Some 12 or 14 years ago the region was a trackless waste. In 1892 it was opened by railway. Towns sprang up, huge steam shovels attacked the ore, and long trains carried it to the newly constructed docks at the port of Duluth. Even during the depression that followed the crisis of 1893 the output from this field mounted year by year. In 1893, virtually the first year of operation, 600,000 tons were shipped from it; in 1894, thrice that amount; and in 1895 it became, what it has since remained, the most productive of the iron-mining districts. A little less than half of the ore is of Bessemer grade. Its physical constitution, moreover, is such that, for advantageous use in the furnace, other ore has hitherto been mixed with it.

29.—The relative importance of the Superior ore fields, the order in which they have been developed, and their relation to the iron ore production of the whole country, are shown by the following figures:—

956

Iron Ore Production (in Thousands of Gross Tons).

	1880.	1885.	1890.	1895.	1902.
Menominee	592	690	2,282	1,924	3,741
Marquette	1,384	1,430	2,993	2,098	3,040
Gogebic	—	119	2,847	2,548	2,912
Vermillion	—	225	880	1,079	1,676
Mesabi	—	—	—	2,781	12,892
Total Lake Superior ..	1,987	2,466	7,071	10,429	24,281
Total United States ..	7,120	7,600	16,036	15,957	35,554

(c) GERMAN IRON ORE CONDITIONS.

German Ore
Conditions.

30.—When, with the Iron and Steel Institute, I visited Germany in 1880, that country was producing at the rate of about 7½ million tons of iron ore annually, and importing 607,000 tons, while the exports of its home ores, mainly from Luxembourg (which is within the German Customs Union), were 1,263,036 tons. The principal fields worked at that period were those supplying the local ores of Bonn, Dortmund, Clousthal, and Breslau, while increased attention was being given to the working of the oolitic ores of Luxembourg. The workings generally were, however, very small. In 1880, 839 mines or workings were recorded as in operation, producing altogether less than 7½ million tons, while in 1900, 575 mines or workings produced close on 19 million tons. The average output of iron ores per workman, over the whole of Germany, was in 1880 only 202 tons, whereas in 1900 the average rose to 435 tons, or 115 per cent. more than that of 20 years before. This, of course, means that the cost of the home ores of that time was much greater than that of the present day. In the official records the average value of the home ore produced in 1880 is given as 4·76 marks (shillings), while that of 1902 is given as 3·66 marks per ton, but while labour has in the interval become much more effective the cost of iron ores has not fallen in proportion, partly because wages are now considerably higher than they were then, and partly because other charges are relatively greater. More than two-thirds of the total home supply of German iron ores is now obtained from the mines of Alsace-Lorraine and Luxembourg, where the average value of the ores produced is returned for the last five years at between 2s. and 3s. per ton. In these regions the available supplies of ore to-day are returned at nearly 3,000 millions of tons, besides the ores of the jurassic and chalk formations, which are stated to contain many ores worth the winning.

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31.—German imports of iron ores are steadily increasing. Between 1880 and 1901 they increased sevenfold, and the imports of foreign ores in 1902 exceeded 4,370,000 tons. This figure includes not only the ores received from Sweden, Spain, and other countries remote from the Fatherland, but also the ores received from the contiguous fields of Nancy and the Meurthe-et-Moselle. This movement has increased so rapidly that since 1895 the German iron ore imports have considerably more than doubled. In the four years ended 1901 the imports increased by 37 per cent. From 1874 to 1893 the exports of German ores exceeded the imports. In 1902 the imports exceeded the exports by 1,981,753 tons.

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A good deal of the ore now imported is received from Sweden at prices which are relatively high under contracts made over considerable periods, when prices were abnormal. Speaking generally, it may be said that while Great Britain mainly relies upon Spain for its supplies of foreign ore, Germany has placed its chief dependence on the more recently developed fields of Sweden and Swedish Lapland. Not only does Germany increase her imports of foreign ores, but her principal home supplies are not favourably situated for her chief iron-making centre, both Alsace-Lorraine and Luxembourg being situated several hundred miles—involving a railway rate of 6s. to 7s. per ton of ore—from the main groups of blast furnaces in Westphalia.

32.—Imported ores are carried up the Rhine from Dutch ports, and thence transhipped by rail or canal to works inland at a very low freight rate—from 1s. to 2s. per ton carried.

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33.—The so-called minette districts of Lorraine, Luxembourg, and Nancy, is the chief source of German iron ore supply. About 14 million tons were raised in Lorraine and Luxembourg in 1902, being about 80 per cent. of the total home supply, at an average official value of about 2·4 marks per ton. This is much the same as the value of the cheaper oolitic ores of Great Britain, but the iron content of the minette ores runs higher. Since 1872 the production of iron ore in this minette ore region has advanced as follows—in metrical tons:—

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	1872.	1902.	Increase per cent.
Lorraine	685,000	8,793,000	1,200
Luxembourg	1,171,000	5,130,000	336
France	1,009,000	4,400,000	335

34.—The total output of these ores in 1892 was 2,865,000 tons, and in 1902 was over 18 million tons.

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35.—It may be noted that this region is the main source of supply for the French and Belgian, as well as for the German iron industry.

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(d) IRON ORE AND PIG IRON IN LUXEMBOURG.

36.—Auguste Dutreux, of Paris, has compiled some figures for a series of years, which show the fluctuations in the prices of minette ore in Luxembourg, and of Luxembourg pig, both in francs per metric ton. The figures quoted below also show the annual production of ore per man, in metric tons:—

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Years.	Average price of ore. Fcs. per metric ton.	Average price of pig. Per metric ton.	Average annual product per man. Tons.
1880	3·05	—	598
1885	2·53	—	663
1890	2·45	63	804
1895	2·45	46	852
1896	2·48	51	945
1897	2·62	58	945
1898	2·60	55	982
1899	2·84	57	985

964 37.—This ore is self-fluxing. Some of it is mined as low as 10d. per ton. It is partly quarried and partly worked by tunnels and deep mines. The cost of the ore delivered at works is computed at about one penny per unit, or 8s. 4d. per ton.

965 38.—Most of the important German and Belgian iron works control ore properties in Lorraine and Luxembourg, and, as some of them acquire their holdings at a time when they were of much less value than now, they possess a good thing.

(e) FRENCH IRON ORE CONDITIONS.

966 39.—It is hardly necessary to bestow much consideration on the special circumstances of France as an iron-producing country, because France is not to any extent worth speaking of as an iron-exporting country. But it may be well to state that the conditions as to ore and fuel supply that prevail in Lorraine and Luxembourg apply, *mutatis mutandis*, to the adjoining French district of the Meurthe-et-Moselle, which now produces nearly two-thirds of the total iron ore output of France.

967 40.—So far as imported iron ores are concerned, Germany enjoys no advantage over our own country. If anything, she is at a disadvantage, because imported ores are in Great Britain—in Barrow, Workington, Middlesbrough, Cardiff, and elsewhere—delivered by steamer close to furnaces, in some cases without any other cost, whereas in Germany the ores have to be conveyed by the Rhine, and thence, usually for a few miles only, to works. Krupp has cheap Spanish ores, but most of the other large German firms have to buy their supplies at ruling market rates.

(f) HOME ORES COMPARED WITH IMPORTS.

968 41.—The proportions of the total iron ore supplies of different countries of home origin and imported have been as under for the year 1902:—

				Home output.	Imports.	Percentage of total imported.
				Tons.	Tons.	Tons.
United Kingdom	..	..	..	13,426,000	6,440	32.4
Germany	..	..	..	17,943,000	4,370	19
France (1901)	..	..	..	4,791,000	1,663	25.8
Belgium, Austria, Hungary (1901)	..	..	..	1,963,000	218	10.1
United States	..	..	..	35,555,000	1,165	3.1

969 42.—These figures show that Great Britain imports both a larger volume and a larger proportion of her total supply than any other country, being followed by France and Germany in the order given.

(g) DURATION OF IRON ORE SUPPLIES.

970 43.—In considering the competitive capabilities of different countries, it is necessary, in order to enable a true appreciation to be arrived at, to examine not only the actually existing ore resources, but their extent and duration. Ore Supplies.

971 44.—There is a very common impression that this country is nearer ultimate exhaustion of both her iron ores and fuel than any one of her great competitors. This is possibly true, and, if so, is only what would be looked for in view of the much longer period during which the depletion of British minerals has been in progress. The total quantity of mineral raised in the Cleveland district alone from first to last is not much different from the quantity produced in the Lake Superior ranges as a whole, not to speak of the older British ore-fields, which have been worked for 100 years, more or less.

972 45.—Mr. A. Carnegie has stated that in Cleveland “in 20 to 25 years the supply of ironstone will be practically exhausted at the present rate of production, except that two concerns will then still have sufficient for some years longer. The Cumberland supply is nearly already exhausted.” He went on to compare with this dismal outlook the circumstances of the United States, which he declared to have “a proved supply of first-class ore only for 60 to 70 years, and a reserve of inferior grades which may keep her supplied for 30 years longer.” If these statements be true, then our own country must stand at a disadvantage in comparison with the United States in reference to its iron ore outlook. But has Mr. Carnegie not made the mistake of giving to the United States the benefit of all its known inferior grades of ore, while withholding the same qualifying conditions from Great Britain? As regards the Cleveland district, the facts are certainly not as stated. Several authorities have called attention to the rapid depletion of the best ores of the Cleveland district, and estimated that their life would not be a long one. But it also has been pointed out that there were large supplies of ore of lower grades, of which the extent and probable duration are not only not known, but are hardly capable of estimation. The best authorities on the extent of the ores of the Cleveland district have calculated that during the half century that they have been steadily worked, some 200 to 220 million tons have been raised in all.

973 46.—The total available supplies have not only not been nearly exhausted, but we have as yet done little more than touch their fringe. It may be true that the best ironstone is not over-abundant. It does not follow that the inferior grades cannot be utilised under other conditions. The shale ironstone cannot be worked so cheaply as the mineral now and hitherto produced. But, even so, it is presumed that when our best ore is gone we shall be competing with other countries that are more or less in a similar position. It is certain that neither the United States nor Germany, at the end of 25 years from now, will any longer have virgin supplies to draw on, so far as our present knowledge enables us to make a forecast. So far as Cumberland and Lancashire are concerned, the output of iron ore has certainly fallen off within recent years, but those who ought to have the best information on the subject are of opinion that there is, perhaps, as much ore left in the district as the quantity already mined, and the frequent discovery of new deposits would seem to confirm this view.

47.—Some hold the view that there is as much ore left in Cumberland as the large quantity already mined. He remarks: "We are undoubtedly going through a period of depression and decreased output, but this is the history of our iron ore deposits here. 'Cyclones of depression,' as it were, are prevailing, owing to the abandonment of one mining property, and the opening out of another. It is true most of the existing mines still keep working away, and giving decreased outputs, but we must not forget the new deposits opening out." New deposits are to be found at various local centres.

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48.—Germany claims to have larger unexhausted supplies of ascertained ores than any other country. There is as yet no scarcity, nor yet threatened scarcity of the minette ores. Indeed, it is estimated that the minette supply of Lorraine is probably sufficient to support the present rate of working for 800 years. All such estimates are, of course, more or less conjectural, and it is quite probable that in Lorraine, as in our own Cleveland district—where the available supply 30 years ago was computed at 5,000 million tons—the good ores will only be a relatively small proportion of the total estimated reserves. At any rate, it is stated that already all the iron ore fields in this region have been taken up, so that there is little or no room for future enterprise in this direction, "apart from a few unimportant pockets." It is much the same in Cleveland. Very few deposits that are worth anything and likely to pay for the cost of working, are not already secured, so that there is not much chance of an equally good footing for new-comers.

975

49.—As regards the United States, Mr. Carnegie, speaking in November, 1902, declared that "mining men should seriously consider how many decades' supply such as that of 1891 to 1900 of high grade materials is in sight, or even discoverable, on the United States side of the boundary. If this amount be placed at 1,000,000,000 long tons, mining at the rate of 20,000,000 tons per year would exhaust the supply in the first half of the twentieth century, or in about the same length of time that mining has been carried on in the Lake Superior region. The exhaustion within a few decades of the high grade ores of the Lake Superior region now discovered is little short of a certainty. It is therefore plain that the material in which the percentage of iron is below the present market demand, and which must be handled in connection with present operations, should be stock-piled, and that the mines be developed and exploited with the expectation in a comparatively short time of mining material running between 50 and 60 per cent. of metallic iron, and within a comparatively few decades of material running between 40 and 50 per cent. metallic iron." The *Iron Age* admits that "the facts indicate the gradual lessening of the supply of high grade Bessemer ore in the Lake Superior district, the utilisation of a lower grade of ore than has been worked during the last 10 years, and thus the increased cost of iron-making based on Lake Superior ores."

976

50.—In the Lake Superior region, the four old ranges are pretty largely exhausted so far as the ordinary producers are concerned: the steel companies control perhaps 90 per cent. of their ore in sight, with not a great deal being discovered. As to tonnage, the Mesabi dominates the other four ranges. There may be as much as 250,000,000 tons of ore in sight on the four old ranges, while on the Mesabi there is stated to be a proved supply of over 500,000,000 tons.

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51.—So far as British supplies of ore are concerned, no recent attempt, based on expert knowledge of the facts, has been made to compute them. We have seen that at the present rate of depletion the best ironstone in Cleveland may be exhausted within 20 years, but of the inferior kind, known as shale mineral, there is as yet a practically unlimited supply. This latter description could not, however, be used without increasing the cost of production of iron and steel. On the West Coast great uncertainty exists as to the available supply of Bessemer or hematite ore. The output has largely declined of late years in the face of the greatest incentives to an increase, which would ordinarily be accepted as an index of approaching exhaustion, but there are those who maintain that the district has large supplies still undiscovered and new deposits are found from time to time.

978

52.—In the newer districts of Lincolnshire, Northamptonshire, &c., there is much ironstone still to be worked, but the quantity is unknown, and, so far as I know, unestimated. Here, also, the best stone has largely been used up.

979

53.—An important question is the character, as well as the quantity, of the ores that remain. In the older iron-producing countries the virgin supplies have been so far exhausted that the cost of the remainder per unit of iron, has naturally tended to increase. This remark applies to the United States and Germany as well as to Great Britain. Hence our competitive position is not perhaps likely to become relatively less favourable. It is conceivable that it may even become more so.

980

54.—Hitherto the country that has depended mainly on home ores has probably been in the best position. This remark has certainly applied to the three countries dealt with. But is it not possible that in the future the country that has the best command of foreign supplies will rule? The position that I hold tends to bring under my notice much knowledge of such foreign supplies. The great iron-making countries are sure to find their home ores become dearer from year to year. Their foreign supplies need not necessarily increase in price. There is hardly any outside country that may not become tributary to our demands.

981

55.—The Association which I represent has moved the Foreign Office and the Board of Trade to collect and publish all available information as to foreign sources of ore supply, and a volume dealing with this matter will shortly be issued by the Board of Trade.

982

56.—Important changes rapidly take place in the iron industry. Less than 10 years ago iron ore fields could have been purchased in most countries for much less than the prices of to-day. The capital value of ores of the United States Steel Corporation, at, say, 4s. per ton, is at least five or six times that at which the same ores would then have been taken, and imposes a permanent burden on the pig iron maker which was not then dreamt of. Within the same interval the actual cost of producing ores, alike at home and abroad, has been more or less increased, and even in the Southern States, where six-dollar pig iron was then talked of as a permanent business, the 50 per cent. soft red ore which could then be delivered at the furnace at 55 cents a ton no longer exists, and costs of pig iron taken at 4s. 2d. to 6s. 6d. per ton more than in the past.

983

1b.—FUEL SUPPLIES.

56a.—The United States enjoys the reputation and the obvious notable advantage of producing cheaper fuel than any other iron-making country, and of having it in greater abundance and of the best kind. The main source of supply for American furnaces in the Connellsville region, which ranges between 30 and 50 miles from Pittsburg,

984

So cheaply can coal be raised in this region that coke has been sold over long periods at about 1 dollar per ton, which means the consumption of about $1\frac{1}{2}$ tons of coal, and the expenditure of about 1s., or a trifle more, in the process of conversion. Prices, however, fluctuate greatly, and within the last two years the price of Connellsville coke has ranged from $2\frac{1}{2}$ to $3\frac{1}{2}$ dollars per ton. There are about twelve different coking coal fields in the United States, including Connellsville, which produces from 12 to 15 million tons of coke annually, of which 11 to 12 million tons are produced by the Steel Corporation. Mr. Lynch, who has the control of the coking plants of the Company, told me when I was in Pittsburg, two and a-half years ago, that that organisation owned 55,000 acres of the entire Connellsville field, or nine-tenths of the whole area, that the cost of the coal used was about 2s. 1d. per ton at the pit's mouth, the main seam being 9 ft. thick, and only 37 cents (1s. 6 $\frac{1}{2}$ d.) per ton for mining. In Alabama, West Virginia, Ohio, and Tennessee, the cost is almost equally low. Whatever the cost of coke production may be, it costs about 3s. to transport the coke from the ovens to the furnaces in Pittsburg, and the rate to the adjacent valleys is about 4s. 6d. This will represent the approximate cost at most of the other centres where coke is used for iron-making, excepting Chicago, where the freight is 10s.; Buffalo, where it is 7s.; and Philadelphia, where it is about 8s. (\$1.95.)

985

566.—Speaking generally, coke is much cheaper at the pit's mouth in the United States than in this country, but it generally costs as much to transport it as in Great Britain, owing to the greater distances to be covered. No important iron-making district in America, excepting that of Birmingham (Ala.), has its coke delivered so cheaply (for freight) as the Cleveland district here, where the rate is 2s. to 2s. 6d. from the Durham coalfield. The cost of producing English coke is, however, materially greater, because the coal costs more to work. Scotland uses raw coal, which is cheap in price, and one or two districts in England do the same. Cumberland and North-west Lancashire mainly use Durham coke, which costs about 12s. to 13s. at the ovens, and 7s. 6d. for railway haul. South Wales has coal and coke supplies near to the furnaces. Germany possesses no advantage over Great Britain in respect of fuel in either quality or location, whereas Westphalia is far from ore supplies, as already stated. Most of the furnaces in Westphalia are built near to coal. The Connellsville and the South Durham coking coal is likely to be exhausted within the next 40 to 50 years, and coke is likely to become dearer within a much shorter period.

II.—PIG IRON MAKING CONDITIONS.

(a) COSTS OF PRODUCTION.

986

57.—The total make of pig iron in the world half a century ago was under five million tons. In the present year the output is likely to be 44 million tons. In other words, we have made eight-fold more progress during the last fifty years than we did in the whole of the previous history of the world. If we go back to the year 1800, the advance of recent years becomes still more remarkable, for at the beginning of the nineteenth century the total world's make of pig iron was not a million tons, so that we have made forty-fold more progress in the last 100 years than we had done in all previous recorded history. The United States has, of course, been the great record-beater since 1890, when it first got ahead of our own country, although, ten years before, we not only produced twice the quantity credited to the United States, but also nearly one-half of the total iron output of the world.

Pig Iron Costs.

987

58.—All other things being approximately equal, the country that produces the cheapest pig iron should in the long run, be the master of the iron trade situation.

988

59.—For this reason it is important that the conditions of to-day, from a pig iron making point of view, should be examined with care.

989

60.—This examination need not at present go beyond the three countries whose iron ore conditions have already been compared. Other countries are, no doubt, coming forward more or less rapidly, including Austria, Russia, and Canada, but, so far, real competition is mainly confined to the greater iron-making countries, the United States, Germany, and Great Britain.

990

61.—The total output by countries has been as under:—

Total Output of Pig Iron by Leading Countries, in tons.

	1880.	1890.	1900.	1901.	1902.
United States	3,896,554	9,349,943	14,009,624	16,133,461	17,821,307
Great Britain	7,800,266	8,030,374	9,052,107	7,804,766	8,517,693
Germany and Luxembourg	2,729,038	4,658,451	8,520,541	7,860,893	8,402,660
France	1,725,293	1,962,196	2,699,494	2,400,240	2,427,427
Belgium	624,302	829,542	1,018,507	1,024,576	1,102,910
Austria-Hungary	750,134	945,775	1,475,000	1,408,210	1,430,509
Russia	448,411	926,482	2,925,600	2,816,800	2,520,904
Sweden	382,108	489,887	526,868	528,000	524,000
Spain	52,000	148,704	294,118	296,858	350,000
Italy	6,000	8,842	12,200	12,500	30,640
Canada	23,100	25,800	88,867	244,976	319,557
Japan	7,000	15,000	64,000	75,000	24,495
Other Countries	40,000	70,000	150,000	200,000	150,000
Totals	18,484,206	27,460,996	40,836,926	40,806,280	43,622,102

991

62.—In 1903, the United States produced over 18 million tons, and the German Empire over 10 million tons of pig. These two countries alone produced in that year more than the whole iron output of the world in 1890.

63.—I have taken some pains to arrive at the cost of producing pig iron in the three countries we are considering, and have reason to believe that the following figures are not much wide of the mark, being, indeed, in some cases, actual costs placed at my disposal, for 1903-1904 :—

992

1.—GREAT BRITAIN.

					Cleveland iron.	Hematite iron (West Coast).
					s. d.	s. d.
Iron ore	..	..	..	..	16 0	25 6
Coke	..	..	..	..	16 0	21 0
Limestone	..	..	..	..	1 6	1 4
Wages at furnace	..	..	..	..	3 9	4 0
Stores, loose plant, &c.	..	..	..	..	0 8	0 7
Bricks, clay, and boiler coal	..	..	..	..	0 8	0 8
Fixed charges, including re-lining and repairs	..	..	..	..	2 3	2 4
Totals	..	..	..	..	40 10	55 5

2.—GERMANY.

64.—The cost of producing pig iron in Lorraine and Luxembourg, and in Westphalia, under favourable conditions, may be taken at the following figures :—

993

					Lorraine, &c.	Westphalia.
					s. d.	s. d.
Iron ore	..	..	..	..	8 4	22 0
Coke	..	..	..	..	22 6	13 0
Labour	..	..	..	..	3 0	3 0
Incidentals	..	..	..	..	3 0	3 0
Totals	..	..	..	..	46 10	51 0

65.—These are higher figures than those recorded for some previous years. Indeed, when coke could be purchased more cheaply, the cost of producing a ton of iron in Lorraine approximated 30s., but with syndicates everywhere regulating prices this cost is hardly likely to be repeated.

994

3.—UNITED STATES.

					Pittsburg.	Alabama.
					s. d.	s. d.
Iron ore	..	..	..	..	33 0	16 0
Coal and coke	..	..	..	..	11 0	15 6
Limestone	..	..	..	..	1 6	1 6
Labour	..	..	..	..	3 0	3 6
Incidentals and fixed charges	..	..	..	..	2 0	2 6
Totals	..	..	..	..	50 6	39 0

66.—According to these comparisons the cheapest iron is being produced to-day in Alabama, the next in our own Cleveland district, the next in Lorraine. Much of the iron produced in each of these three localities is non-Bessemer, or basic.

995

67.—The cost of producing hematite iron is 50s. 6d. at Pittsburg, compared with 55s. 5d. on our own West Coast, but in the Cleveland district this class of iron can be produced for about 5s. less, which would make it practically identical with the Pittsburg price, and the corresponding cost in Westphalia would be perhaps 1s. more under favourable conditions.

996

68.—A recent report of the German Home Office raises the question in the United States whether the American metallurgical industry can produce cheaper than the German. The report holds that, so far as iron and steel making is concerned, there is no advantage, judging merely from the prices of ore, coal or coke, cost of transportation, and labour, "the cost price of a ton of Bessemer pig iron at Pittsburg, even to the United States Steel Corporation, does not fall below \$12 to \$13; and the price is about \$15 for plant less favourably situated than the United States Steel Corporation with regard to coke, ore, and transportation facilities." It is added that even in Alabama the cost per ton of pig iron cannot, under existing conditions, go below \$10 or \$11. It is further argued that the cost of partially and totally finished steel products is higher in proportion as the amount of labour embodied in the product increases, and that the larger the share of the total cost represented by labour the less chance the American metallurgical industry has of competing with foreign products.

997

69.—The present conditions do not appear to allow any one country, all considered, an overmastering advantage over others, except as regards isolated works or localities, on striking a balance of the whole. Germany has in one district dear ore and cheap fuel, and in another dear fuel and cheap ore. The United States have cheap ore at the mines, but a transport of a thousand miles, more or less, and two breakages of bulk neutralises much of the gain from this source, while the centres of iron production are in almost all cases far from the sea. Great Britain is in most districts favourably situated for sea transport, but both her ores and her fuel are getting dearer, and she loses much of the natural gain due to her geographical position in consequence of railway monopolies and shipping conferences.

998

(B) GENERAL TENDENCIES AND RESULTS.

999

70.—The superiority of particular works and particular districts is in nearly all cases founded on the successful practical application of economic principles and mechanical improvements of various kinds, which, in the majority of cases, are as open to one country as to another, and must be the result of individual initiative, skill, and enterprise. To this combination has been mainly due the success of the great Carnegie Steel Company, of which I have had opportunities of knowing much, the Krupp firm in Germany, the Creusot Works in France, the Cockerill Company in Belgium, and several concerns that could be named in this country.

1000

71.—This leads to a consideration of the methods, conditions, and habits of the principal competitive countries, which it would be impossible to deal with here in such a way as to do it justice. These are very much a matter of environment. The United States have come to the front, not because their principals and administrators were necessarily more competent than our own, but because they had a boundless home market, in which they enjoyed a large measure of protection, and because they appreciated the certainty of rich rewards for effective enterprise.

1001

72.—In a few words, I may indicate what this stimulus has enabled the American iron masters to achieve.

1002

73.—It has been calculated that the pig iron production of American blast furnaces in 1903 was 30 times that of 1850, and the iron ore consumption of 1903 was about 28 times that of 1850. In 1850 from two to three times more fuel was necessary to produce one ton of pig iron than is used to-day.

1003

74.—Less than half a century ago, beyond the power to supply blast, all work about the blast furnace was manual. To-day the locomotives, shifting drop-bottom cars, liquid metal or cinder ladle cars, and flue dust cars displace the horse, wagon and cart, while car dumpers, bridge or cable conveyors with scoop buckets and self-dumping cars running upon skids to the furnace tops, are familiar features of blast furnace equipment.

1004

75.—The casting house, with its rows of sows and pigs, has given way to a shelter to protect the runners leading to the iron and cinder ladle cars, the former supplying the casting machines, which cast 800 tons of metal daily, or feeding mixers whose capacity exceeds the weekly product of a furnace of 50 years ago, or charging into converters, which, in a single "blow" of fifteen minutes, treat as much metal as was made in a day by an up-to-date blast furnace in 1850.

1005

76.—Practically all ore used is now sold or purchased on guarantees of chemical composition, which limit the contents of phosphorus to hundredths and even thousandths of a per cent.

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77.—Finally, less manual labour is now required in assembling materials at, and in the operation of, a blast furnace making 400 tons, than at one which, 50 years ago, produced 30 tons per day.

1007

78.—The tendency in all countries has been to reduce the number of establishments and to increase the average output. As a case in point, there were in the United States in 1880, 490 works engaged in the production of pig iron, and as the total output of pig in that year was 3,375,000 tons the average per establishment was under 7,000 tons per plant. But in 1900 the average was over 40,000 tons per plant. The same movement is apparent in the development of steel plants. The average annual output per United States plant in 1880 was about 8,500 tons, but in 1900 it had advanced to 35,000 tons. In both cases the present average is much larger still.

1008

79.—The country and the works that has carried this movement farthest may depend on making the most marked progress and on being able to produce the most cheaply. In Great Britain there has been less disposition to throw over old plant than in some other countries. We make less use of the scrap heap than is often necessary.

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80.—My friend Mr. C. Kirchhoff, of the *Iron Age*, has calculated that between 1888 and 1898 the following remarkable changes had taken place in the costs of producing American pig iron—calling the former year 100:—

	1889.	1898.
Product per day	100	167.7
Ore cost	100	79
Coke cost	100	64
Labour cost	100	52
Sundries	100	33.4
Total cost	100	63.4
Average selling price	100	61.2
Average net profit per cent.	100	47.9

(C) BASIC PIG IRON.

1010

81.—The development of the German iron industry has been mainly founded on the accidental circumstance of the discovery and practical application of the basic process. This has been the cause of the rapid development of the ore fields of Lorraine and Luxembourg, and of the increase in the output of German pig iron since 1880 from 2,729,000 tons to over 10 millions. Of this latter quantity, more than six million tons are basic iron.

1011

82.—One of the most unsatisfactory features of our own pig iron situation is the slow growth of the basic pig iron branch of the trade. The output of basic pig from British ores has not yet in any one year equalled a million tons. And yet if our home ores are specially suited to produce any variety of pig, it is this. Our hematite ores are decreasing in volume, and, so far as appearances go, are likely to continue to do so. Very little chance appears to be now left to hematite iron producers to work on British ores alone. Imports of foreign ores are becoming more and more necessary. This would not be a matter for concern, if those ores were plentiful and cheap, but they are not so. They are dearer to-day than they were twenty years ago, and some of the best sources of supply have become practically exhausted. In these circumstances, the limited relative extent of the British basic iron industry is matter for regret. It is not the fault of the ironmaster. The blame lies at the door of the inspecting engineers, who still persist in demanding that their requirements shall be supplied from acid material, and who discourage the use of basic steel to an extent that is simply ridiculed in other countries. By such conduct, conceived, as they believe, in the best interests of their clients or employers, British engineers have done much to hinder the legitimate and natural growth of the British iron industry.

III.—CONDITIONS IN THE STEEL INDUSTRY.

83.—To-day, the United States alone are producing 150 times as much steel as the whole output of the world in 1850, while the total make of steel in all countries in 1902, was 340 times as much as the world's output in 1850. The chief details of this development are set out for four different periods in the details which follow:—

Total Output of Steel by Leading Countries, in metrical tons.

	1881.	1895.	1900.	1902.
United States	1,287,983	6,312,074	10,689,640	14,994,200
Germany	624,418	2,830,468	6,645,869	7,780,600
Great Britain	1,341,690	3,365,109	4,904,232	4,970,000
France	388,894	714,523	1,660,118	1,854,620
Belgium	132,052	454,619	654,827	776,875
Austria-Hungary	134,218	330,000	945,200	1,190,000
Russia	295,568	574,112	1,830,260	1,700,000
Sweden	28,597	197,177	300,536	283,500
Italy	?	55,000	104,200	100,000
Spain	?	65,000	125,000	101,634
Totals	4,233,420	14,898,082	27,859,882	33,851,429

(a) COMPARATIVE CONDITIONS.

84.—The output of pig iron and steel does not always run on all fours—in other words, while there has, in some cases, been a notable reduction in the make of pig iron, the output of steel has largely increased. This shows that the demands of the world to-day are mainly for steel, and that, as a structural material, steel is rapidly taking the place of other materials, including timber.

85.—One of the first questions that a steel manufacturer asks himself when putting down a new, and extending or modernising an old plant, is that of how far there is likely to be a market for the increased product? The answer appears to have been more encouraging to the Americans and Germans than to our own countrymen, judging from the enterprise with which they have both considerably more than doubled some product within six years, while we have advanced much more slowly. The problem remains to-day the same as in former periods. Will the world consume the vast increase of steel now being arranged for, or will that increase prove the undoing of those whose energy and enterprise have made it possible?

86.—The cost of conversion of pig iron into ingots and rails amounts in this country, in a typical Bessemer steel works, having its auxiliary blast furnaces, to 17s. 11d. from pig to ingots, and to 19s. 6d. from ingots to rails. The labour on the ingots is 2s. 10d., and on the rails 6s. 10d. The difference is made up of 10s. 7d. for spiegel, ferro, rail ends and scrap, repairs, stores, rolls, and tools, &c. The total cost of labour from the ore to the finished rail is 13s. 8d. per ton of rails.

Elements of Ultimate Cost of British Steel.

	s.	d.
Cost of pig iron	55	6
Cost of steel ingots	76	0
Cost of steel rails	96	0
Difference between pig and ingots	17	11
Difference between ingots and rails	19	6
Wages per ton of pig iron	4	4
Wages per ton of ingots	2	10
Wages per ton of rails	6	10
Fixed charges per ton of pig	1	6
Fixed charges per ton of rails	1	6
Stores and sundries per ton of pig	6	0
Stores and sundries per ton of ingots	6	0
Stores and sundries per ton of rails	2	10

87.—In British steel works, the output of steel to-day is about three million tons a year less than that of Germany, and about 10½ million tons less than that of the United States. The open-hearth, or Siemens process has of late years made considerable progress. The Bessemer process has made none, the output for the last 15 years having fallen below the figures reached prior to that time. The open-hearth practice of this country is probably unexcelled anywhere. In the United States and Germany the Bessemer process is still the leading one. Here it is the open-hearth.

88.—The question is sometimes asked why should not Cleveland, Wales, and Lanarkshire produce blooms and billets as cheaply as they are imported? These districts have lately had cheaper pig iron than either German or Pittsburg, and cheap pig iron is the basis of the ability to produce ulterior products cheaply. And so it is. But when dumping is practised, natural conditions and advantages are not generally allowed to count for much. It is not then a question of the price at which pig iron can be produced without loss, but the problem is rather to dispose of a certain quantity of material, whether with or without profit, in the largest and most readily available market.

89.—The American steel manufacturer is more persistent and more successful in his efforts to reduce standing charges than is usual in this country. This is largely the origin and the *raison d'être* of dumping. The census returns show that in the year 1900, the total amount expended in charges of this sort in the production of 15,040,000 tons of steel was 10s. 6d. per ton, including rents, rates, interest, insurance, and salaries. If the output of steel had been only half that quantity, it is probable that those standing charges would have nearly doubled per ton. Indeed, the importance of the charges in question in the United States is indicated by the fact that the total wages paid to the workmen employed in producing the 15 million tons of steel named was only one and a-half times greater in total amount than the total of those charges.

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1019 90.—In this country it is much more difficult to find constant employment for iron and steel works than in either America or Germany, partly because the home market is much less certain, and partly because it is necessary to export a larger proportion of our total output, in respect of which there is great irregularity.

1020 91.—The steel industry of this country has of late years passed through a difficult time. This remark more especially applies to the Bessemer process, which has been so largely displaced by the open-hearth. In no other country except our own and Austria has this been the case to the same extent. The difficulty of obtaining orders for Bessemer steel and of manufacturing at a profit, has led to the closing of a number of British Bessemer works. Open-hearth works have generally done much better, although the resources of production, as has already been stated, are probably at least twice as much as the actual demand. We may admit that larger outputs are obtained in American works, but that is due to causes which do not operate here, and not least to their having a more suitable quality of pig iron, and to their control of a very much larger market.

1021 92.—The most prominent feature of the German steel trade in recent years, and of the American steel industry during the last six years, has been the increased production of basic steel. Both in Germany and in the United States the production of basic steel is much larger than in this country. The Germans produce nearly 7½ million tons against about a million tons in Great Britain. The output of the United States has advanced as shown in the following table, the difference between pig iron and steel being largely made up of scrap, which is becoming scarce in the American steel trade, so that not only must the basic open-hearth steel maker be content with less scrap, but he has to pay a full price for what he does use:—

Year.	Production of basic iron, tons.	Production of basic open- hearth steel.	Percentage of pig iron to steel.
1897	556,291	1,056,043	52·7
1898	785,444	1,589,412	50·1
1899	985,033	2,080,426	47·4
1900	1,072,376	2,545,091	42·1
1901	1,448,850	3,618,993	40·0
1902	2,038,590	4,496,533	45·2

After an almost steady drop for four years averaging 3·2 per cent. per year, the proportion of pig to steel suddenly increased 5·2 per cent.

1022 93.—In this country there are comparatively few works producing basic steel, although the basic process is of British origin, and our ore supplies are more or less suited to its development. This is mainly due to the fact of engineers specifying acid steel, which is generally produced from more costly materials. To this extent the British steel trade is handicapped.

(b) STEEL-MANUFACTURING COSTS.

Steel Costs.

1023 94.—The cost of converting pig iron into steel in the United States must, in the majority of cases, be somewhat less than the corresponding costs in this country, despite the fact that wages there are materially higher. But the cost is not in any two cases the same. The cost of labour is phenomenally low. In the case of a rod mill brought to my notice, it was less than 4s. per ton of rods. In the case of billets it has been under 4s. per ton. In the case of rails it is probably, on an average, not more than 65 per cent. what it is in this country. In the more finished forms of material it is more than in the lower forms, but, whatever it may be, it is always controlled by the fact that the output of a given plant is usually two or three times that of kindred plants in Europe, with only one-half to two-thirds the number of hands here employed to run it. The Industrial Commission stated that the average cost of the conversion of pig iron into steel billets at 6s. 6d., and the average incidental expenses at 3s., but this is much too high for the best plants.

1024 95.—Manufacturers in this country are blamed by outsiders, and often by their own countrymen, because they do not show greater enterprise in laying down large capacity plants, such as are common in the United States, and are now being laid down to some extent in Germany. Some American furnaces produce 200,000 to 220,000 tons of pig iron a year, whereas the average annual output of British furnaces is not more than 28,000 tons. Some American furnaces, with complete equipment, cost over £200,000 each, whereas the average cost of British furnaces is not probably over £25,000. The average annual production of a pair of Bessemer converters or of an up-to-date rolling mill in the States will generally exceed that of corresponding plants in this country in the ratio of 3 to 1. The truth is that the British manufacturer would not at present know what to do with such a vast product if he had it. Our own home market does not absorb more than 3 to 3½ million tons of steel a year, whereas the American market consumes nearly 15 million tons, and the German market finds an outlet at home for about five million tons.

1025 96.—This noteworthy fact in the steel industry of the world—the much greater output of a given plant in the United States than in any other country—is partly due to the more suitable composition of the iron used, partly to more speedy methods of charging furnaces, and partly to the use of molten iron. In Bessemer practice short blows and short intervals between them count for much. In this country short blows are not so easy, mainly because of the character of the iron used. Even when the plant employed is fully up to date, as it is in many English works, the quantity of steel produced is less than one-half, and sometimes less than one-third, the quantity produced in the best American practice. Most English engineers, on visiting American workshops, have been greatly surprised to see so few men about. Automatic machinery is much more largely used there than in this country.

1026 97.—The combination of up-to-date plants, economies, and improvements has enabled our American rivals, paying the highest wages known in the trade, to produce plates at a cost of only about 3s. 6d. per ton for labour, averaging some 225 tons of plates per shift. One mill at Homestead Works has produced 1,049 tons of sheared plates in 24 hours, which is at the rate of 315,000 tons in 300 working days. A 40 in. cogging mill at the Illinois Works at Chicago produces 200,000 to 250,000 tons per year. These results are not equalled in our own mills. And yet there is no reason to suppose that our plate mill practice is generally much behind that of other countries. It was until lately, if it is not now, in advance of that of any other country. If it has now fallen somewhat behind the best American practice, probably not much ground has been lost.

98.—The Americans go in for much larger outputs than are usual in this country in order to get their costs down. In the plate mills, they do in one stand of rolls what we do in two. In our plate mills, when rolling in the soft rolls, the hard rolls are going round doing nothing; when finishing in the hard the soft are doing nothing. The Americans would put down another engine, and so greatly increase the output, without proportionately increasing the total cost. All the important plate mills are equipped with cold-straightening machines.

1027

99.—The capital actually employed in the American iron industry is shown in the official Census returns to have been in 1900 about £2 per ton of pig iron annually produced, and rather over £5 per ton of steel. The total in both categories was in that year 118 millions sterling. The United States Steel Corporation, for an output of just about one-half that of the United States in the census year 1900, had a capital of about 280 millions sterling, as I reckon it, which, however, embraces iron ore mines, collieries, and other plants. Some details of American conditions are appended :—

1028

Census Figures of Steel Output in the United States in the year 1900.

					Tons.
Total output	..	..	..	..	15,040,000
					Dols.
Cost of materials used	..	..	..	..	390,568,000
Wages paid	..	..	..	..	102,238,000
Miscellaneous expenses	..	..	..	..	24,795,000
Rent, taxes, interest, insurance, &c.	..	..	..	..	24,300,000
Salaried officials and clerks	..	..	..	..	9,422,000
General managers, &c.	..	..	..	..	6,632,000
Value of products	..	..	..	..	596,689,003
Capital employed	..	..	..	..	441,795,000

100.—In 1880, the total German output of steel was 660,592 tons, but in 1903 it had increased to over eight million tons, which is a twelve-fold advance. The concurrent increase of the British steel output was in this interval not more than 80 per cent. That of the United States was much greater than either.

1029

101.—Of the total steel output of Germany, about two-thirds are Bessemer steel, and three-fourths are produced by the basic process, both in Bessemer converters and in open hearth furnaces. The following tables give particulars of the output of steel at the two dates dealt with :—

1030

Production of Steel in Germany in 1880 and in 1903, in metrical tons.

					1880.	1902.
Ingots, blooms and billets for sale	..	..	..	..	36,174	2,183,229
Finished steel	..	..	..	..	624,418	5,190,424
Total steel	..	..	..	..	660,592	7,373,653
Total works in operation	..	..	..	..	53	200
Total workmen employed	..	..	..	..	20,116	126,438

102.—The ingots, blooms and billets manufactured for sale are sold as such, and for foreign as well as for home consumption. It will be noted that the average output per plant has largely increased since 1880, as well as the average output of steel per workman employed, which two factors are criteria of the increased efficiency and economy achieved in the interval.

1031

103.—It has been noted that the German output of finished steel, not to speak of blooms and billets, is much greater than our own. It may be interesting to add in what directions recent progress has been most marked. The greatest advance has taken place in general merchant steel, which embraces bars, hoops, structural material, &c., and amounts to 1,532,000 tons, comparing 1880 with 1902. The next greatest advance has been 652,000 tons in plates and sheets, and the next has been 576,000 tons in rails, railway sleepers, and railway fastenings. British works produce the whole of these on a considerable scale, and I know of no insuperable reason why they should not be produced as cheaply here as under German conditions.

1032

104.—In 1902 alone German steel production showed an increase of 1,211,882 tons. This is one of the greatest advances that the German or any other steel industry has ever made in a single year. The average output of each works was 36,865 tons, and of each workman about 60 tons. The largest item in the category of products was 2,222,951 tons of merchant steel and profiles; the next largest, 921,512 tons of rails and rail fastenings; the third place is held by plates and sheets, which amounted to 856,330 tons; the fourth place is taken by wire, with 547,814 tons; railway sleepers and fastenings ran up to 209,282 tons. The total value of the finished iron and steel products of Germany in 1902 was £61,743,200.

1033

105.—Some 25 German heavy plate rolling mills increased their producing capabilities from about 105,000 tons in the year 1880 to about 818,000 tons in the year 1901. This increase has taken place chiefly during the last 12 years, for, while the producing capacity of the German works in the years 1880 to 1890 little more than doubled itself, in the period from 1890 until to-day it has increased four-fold, i.e., from 236,000 tons in the year 1890 to 818,000 tons in the year 1901. To-day the producing capacity of the German works is nine times as great as it was 22 years ago.

1034

IV.—IRON TRADE BURDENS.

106.—The burdens that attend the manufacture of iron and steel in the form of rates, taxes, insurance, workmen's compensation, royalty rents, and so on, are considerably more onerous in this country than in either the United States or Germany, when considered as a whole, but in individual cases there is probably a heavier burden in one or other of these countries. Thus, for example, Germany pay more for workmen's insurance against accidents than the average paid here. On the other hand, the United States have to pay considerably higher wages.

1035

107.—Hitherto the British iron trade has suffered from the want of a system of standard sections and specifications such as are, and have for many years been, applied in other countries. This source of inferiority and loss has now been removed, thanks to the initiative of this Association, and to the subsequent efforts and influence of the Institution of Civil Engineers, which appointed a Committee about two years ago to deal with this matter.

1036

1037 108.—The reduction of the vast number of sections hitherto employed, and the adoption of sections of more suitable dimensions is one of the greatest reforms of a general character that has taken place in the iron and engineering trades for many years. Under the old *régime*, works that professed to roll structural steel sections had to keep a large stock of rolls, representing for large establishments an expenditure varying from £25,000 to £50,000, and had to be prepared to roll any other sections involving the cost of new rolls, that any erratic or originally-disposed engineer might choose to order, all of which involved great cost and confusion, either to the manufacturer, or to the user, or to both. Under the new arrangements, all this will be more or less a thing of the past. The consumer can only, in a regular way, get standard sections rolled, and only standard sections will be ordered by the leading railway companies, the Admiralty, Lloyds' Register, and other leading buyers. It has been computed that the reform may represent a value of £200,000 to £300,000 annually to the iron trades.

1038 109.—One of the greatest troubles that beset the iron trade of Great Britain to-day is a widespread want of confidence in its future. In my extensive intercourse with iron and steel producers, merchants, and others, I have been much struck with the prevalence of this attitude. The feeling is begot partly of "the magnitude and effectiveness of foreign competition," and partly of the insecurity of the home market. The doubts entertained as to the future of our supplies of iron ore have had some share in producing pessimistic ideas. The frequent and disastrous character of past strikes, and the uncertainty as to the future attitude of labour have also had a certain influence in the same direction. Finally, in a large number of cases, works have not been kept up to date because there has been little or no capital available for the purpose, a result that has had its origin, to some extent, I greatly fear, in the too free distribution of profits in the past, and too limited provision for renewals and depreciation.

1039 110.—The German iron and steel trades have to pay a much larger sum, both absolutely and relatively, than those of Great Britain in respect of accident assurance. This amount averaged in 1900, 11s. 10d. per person assured, or a total of £562,510 for the iron trade alone. The *per capita* payment tends to increase from year to year. In 1886 it was only 3s. 3d., and in 1890 it had risen to 8s. 11d.

1040 111.—The total number of persons assured in this industry was in 1900 returned at 991,287, and their average annual earnings were returned at £49.36. These figures compare with 412,007 persons, averaging £43 of annual wages, in the year 1886.

1041 112.—There is no record of the average amount paid *per capita* in respect of accident assurance in this country, but it is, I know, much less than in Germany, where it averages 1½ per cent. of the total wages paid.

1042 113.—One of the most serious burdens which the iron trade of this country, in common with other British industries, has of late years been called on to bear is the increase of income-tax and local taxation. Income tax is, of course, a charge upon the profits, and not an item in the cost of production, but its influence is none the less in restraint of trade. Twenty years ago, the local taxes of every kind in the North of England averaged in particular cases about 6d. per ton of pig iron. Per ton of finished iron and steel, the same burden amounted to about a shilling per ton, including that borne by the raw materials. These charges have since been materially increased. In Germany and Belgium the local burdens are very much less than they are here. The constantly increasing incidence of this burden is a serious matter for all industrial enterprise in Great Britain.

1043 114.—Another considerable burden which has to be borne in the British iron industry is that of royalty rents. The ownership of the minerals is in this country vested in the owner of the soil, and it is the same in the United States. In Germany the ownership of minerals is vested in the State, and it is the same in France and in Spain, but in Belgium, since 1830, it has been vested in private owners. The following average figures as to the extent of this burden per ton of pig iron produced were calculated about 20 years ago, and will not greatly differ from those of to-day :—

Great Britain.	Germany.	France.
4s. 10d.	6d.	8d.

1044 115.—In the United States, all new mining leases in the Lake Superior ore regions, and in the Pennsylvania coal regions, provide for the payment of royalties, which in the ore regions sometimes amount to 2s. per ton. Speaking generally, the conditions of to-day in America do not greatly differ from our own. In continental countries, as shown, lower royalties prevail.

V.—THE INFLUENCE OF WAGES ON IRON MANUFACTURING CONDITIONS.

1045 116.—In the matter of nominal wages Great Britain occupies an intermediate place between Germany and the United States, being, however, not so much higher than the German as we are below the American level. Wages.

1046 117.—The higher American nominal wage rates do not, generally, appear to operate to the detriment of American manufacturers. On the contrary, it is universally admitted that the real wage-rate—the labour cost per unit of production—is less in the United States than in any other country. The best comparison of American and British wages that I know of, and one of the most recent, is that contained in the report of my colleague on the American Commission of the British Iron Trade Association in 1901—Mr. Axel Sahlin—who obtained from the managers of a considerable number of representatives work actual wage rates, which showed that at blast furnaces, hour for hour, there was then but little difference in the rates paid as between Great Britain and America, while some of the American furnaces produced 3,500 to 4,000 tons per week, compared with 850 to 620 tons in England, with nearly the same number of hands. For unskilled labour, the British rate is materially lower than the American.

1047 118.—In 1895 I was instructed to organise a Commission on behalf of this Association, composed of an equal number of employers and employed, which visited leading works in Germany and Belgium, and inquired into labour conditions and wages, among other matters. We found that in Belgium, both skilled and unskilled labour was materially lower—from 25 to 40 per cent.—under the average of British works, but that in the best German works not only were the wages of the higher classes of workmen almost, and in a few cases, fully as high as here, but that, taking other things into account, the workmen there were in many cases as well off. Unskilled labour was not so well paid, relatively.

1048 119.—Since 1895, German wages have generally been advanced, but not to any very great extent. In the Ruhr coal basin miners' wages have advanced from 3.73m. to 4.55m.; timber men from 2.61m. to 3m., and day labourers from 2.72 to 3.04m. The advances that have taken place in the output of steel since that date have created an exceptional demand for skilled labour, so that manufacturers and mine owners have been compelled

to pay higher wages. The extent of this demand may be roughly indicated by the fact that between 1895 and 1900 the number of persons insured in connection with the German iron and steel industries increased from 665,000 to 991,000.

1048 *contd*

120.—Mr. Asquith recently spoke of German steel as being the “product of sweated labour,” and made a comparison of German and British labour most unfavourable to the Germans. The fact is that in German iron and steel works, and especially in Westphalia, which is the chief centre of the trade, the range of skilled wages differs little from that of Great Britain. Americans have been almost as notorious dumpers as the Germans, but to apply the term “sweated labour” to Americans would be ridiculous, although Mr. Asquith may be reminded that while the average wage paid in British iron and steel works has been taken at about £70, the Pennsylvania average—which embraces more than one-half of the whole of the United States—is stated by the 1900 census at £120, or about 60 per cent. more.

1049

121.—I have compiled the following figures showing the average of miners' wages in Scotland, as ascertained and published by the well-known firm of James Watson & Company, and the daily average of the two leading German coal districts, as ascertained and published in their annual report for 1901 by the Rhenish-Westphalian Coalowners' Association:—

1050

Year.		Scotland.	Dortmund. Hewers. only.	Upper Silesia. Hewers. only.	Amount higher in Scotland than	
					Dortmund.	Upper Silesia.
		s. d.	s. d.	s. d.	s. d.	s. d.
1892	..	5 3	3 8	2 8	1 7	2 7
1893	..	5 0	3 7	2 8	1 5	2 4
1894	..	5 6	3 7	2 8	1 11	2 10
1895	..	4 9	3 7	2 8	1 2	2 1
1896	..	4 3	3 9	2 8	0 6	1 7
1897	..	4 6	4 3	2 9	0 3	1 9
1898	..	5 4	4 6	3 0	0 10	2 4
1899	..	6 2	4 8	3 2	1 6	3 0
1900	..	7 4	5 2	3 6	2 2	3 10
1901	..	6 9	4 10	3 6	1 11	3 3

122.—A glance at these figures will show that while the two countries seldom run on all fours, the Scotch average is generally materially higher than that of Germany. This fact would be more emphasised had I given the average of all German miners' wages, instead of hewers only. The Scotch figures are understood to apply to all classes of mining labour.

1051

123.—From the American census reports for 1900, I have compiled the following records of total and average wages for each of the last three census years:—

1052

Average Wages Paid at Blast Furnaces.

Year.			Total wages paid.	Average employees.	Average wages per employee. dols.
1880	..	..	8,554,000	25,025	341
1890	..	..	13,418,000	30,148	445
1900	..	..	17,849,000	37,425	476

Average of Pennsylvania only.

			Total wages paid.	Average employees.	Average wages per employee. dols.
1880	..	..	4,368,000	11,975	364
1890	..	..	7,047,000	15,411	457
1900	..	..	8,015,000	15,999	500

Average Wages Paid per ton of Pig iron produced.

			Total tons.	Total wages.	Average wages per ton.
1880	..	..	2,987,000	8,554,000	2·8
1890	..	..	8,251,000	13,418,000	1·6
1900	..	..	14,096,000	17,849,000	1·2

Wages Paid in Steel Works per Employee.

			Wages paid. dols.	Average hands.	Average per employee. dols.
1880	..	..	41,880,000	96,164	435
1890	..	..	74,400,000	137,295	542
1900	..	..	102,238,000	183,023	558

Average Wages in Steel Works of Pennsylvania only.

			Wages. dols.	Hands.	Average annual wages per employee. dols.
1880	..	..	20,099,000	43,832	451
1890	..	..	42,396,000	76,609	553
1900	..	..	53,817,000	94,664	568

124.—The upward movement of American wages has not been nearly so pronounced in 1890–1900 as in 1880–1890. In some cases, and in most cases of skilled labour in the Middle States, there has been a decline in 1890–1900.

1053

1054

125.—But what is more important than any upward or downward movement of wages is the recent movement in most American industries to displace skilled by unskilled labour, through the more general adoption of automatic processes and plant. Evidence was given before the United States Industrial Commission to show that in the Steel trade this has been done on a large scale. Many examples of the fact were brought before myself and my colleagues when we visited the chief American works in 1901 as a Commission of this Association. Since then the movement has become even more pronounced. In a recent example of a rod mill worked in Pennsylvania, 46 men produced an average of 160 tons per hour, and only two were skilled, many of the remainder being boys. Twenty years ago, three or four times this force, mainly skilled, and at high wages, would have been required to produce the same result. In our own country to-day, so far as I have been able to gather, not only is the total number of hands required to produce the same tonnage much larger, but the proportion of skilled hands earning relatively high wages is greater.

VI.—COST AND CONDITIONS OF MINERAL TRANSPORT.

(a) COMPARISON OF CHARGES.

1055

126.—It would naturally be supposed that in a small country like Great Britain, with no point of its area more than a hundred miles or so from a seaport, the cost of transport would be much less than in countries which, like Germany and the United States, are differently situated. Geographical conditions should be entirely favourable to this country. But the natural advantages of our geographical position are not realised as they should be, because of the relatively high railway rates enforced and the absence of competition. In America, railway rates per ton mile are from one-half to one-third of their general level in this country. The general average for mineral transport in Great Britain is probably 1½ per ton-mile, the average haul being from 20 to 30 miles. In the United States the average mineral rate is from ½d. to ¾d., the average haul being about 110 miles. When we compare short hauls, the differences are not so marked.

Transport.

1056

127.—The following are some of the actual rates now or recently quoted for the transportation from three leading stations in the Staffordshire districts to some of the leading centres of consumption and export of bars, hoops, and sheets, the chief products of the Staffordshire mills and forges:—

To	Rates per ton.					
						s.
Glasgow	..	..	..	..	..	20-0
Durham	..	..	..	..	..	18-4
Hull ..	..	..	..	..	..	13-4
London	..	..	..	..	..	15-0
Newcastle	..	..	..	..	..	18-4
Preston	..	..	..	..	..	12-6
Workington	..	..	..	..	..	16-8
Carlisle	..	..	..	..	..	17-6
Huddersfield	..	..	..	..	..	11-8
Liverpool	..	..	..	..	..	10-0
Cardiff	..	..	..	..	..	9-2

1057

128.—These rates are quoted for two-ton lots and are undamageable, the damageable rate being about 2s. 6d. per ton more, and four-ton lots and upwards costing usually about 2s. 6d. per ton less. The average rate throughout varies from 1½d. to 1¾d. per ton per mile. The average rate under as similar conditions as it would be possible to obtain in the United States would be a less than halfpenny per ton per mile, and in not a few competitive cases it would be little over a farthing; in Germany it would be from ½d. to ¾d.; and in Belgium, for export purposes, it would be nearly four-tenths of a penny. The very cheapest rate at which Staffordshire iron can reach a port appears to be about 8s. per ton, which is the rate quoted for four-ton lots and upwards to Liverpool, whereas Carnegie can send finished steel of the same description from Pittsburg to New York, a distance of 460 miles, for 6s. 6d. to 8s.; the Tennessee Iron Company can send pig iron from Tennessee and Alabama to Mobile—over 260 miles—for about 4s., and Cockerills of Belgium can send finished iron and steel to Antwerp or Terneuzen, distances of 80 and 106 miles respectively, for less than a halfpenny per ton per mile, for lots of five tons, while the Germans can send finished iron and steel from the centre of Westphalia to Amsterdam, a distance of 147 miles, for 6s. 4d.; to Rotterdam, a distance of 156 miles, for 6s. 7d.; and to Antwerp, a distance of 173 miles, for 7s. 6d. per ton, special rates on a lower scale being often quoted.

1058

129.—According to a statement of differences drawn up some years ago by Sir Bernhard Samuelson, the cost of carrying packed wire from Birmingham to London was then 24s. 4d. a ton; in Germany for an equal distance it was 10s. 4d. to 11s. 2d.; in Belgium, 8s. 11d.; and in Holland, 8s. 2d. For carrying cutlery from Sheffield to Hull the cost per ton was 20s. 6d.; Germany, for an equal distance, 6s. 7d.; Belgium, 8s. 9d.; and Holland, 6s. Carrying machinery from Leeds to Hull cost 25s. a ton; Germany, for an equal distance, 4s. 6d.; Belgium, 8s.; Holland, 7s. 6d. These figures are substantially accurate to-day. Several years ago, the *Journal des Economistes* gave the following comparative statement of carrying rates per ton per mile:—

Country.	d.					
Great Britain	..	..	..	..	..	1-4
Italy	..	..	..	..	..	1-25
Russia	..	..	..	..	..	1-20
France..	..	..	..	..	..	1-10
Germany	..	..	..	..	..	0-82
Belgium	..	..	..	..	..	0-80
Holland	..	..	..	..	..	0-78
United States	..	..	..	..	..	0-40

130.—For the United States the figures represented four-tenths of a penny per ton per mile, a rate which has since been reduced, and particularly on the chief mineral railways. The average receipts per ton per mile on American railways by groups at the last three ten-yearly intervals were as follows, in cents. :—

	1870.	1880.	1900.
Lines east of Chicago	1·61	0·63	0·55
Western and North Western	2·61	1·00	0·89
South Western	2·95	1·11	0·91
Southern	2·39	0·80	0·63
Transcontinental	4·50	1·50	0·93
German average	1·99	0·91	0·70

131.—The iron and other heavy industries in this country may be greatly aided by the adoption within practicable limits of American transportation conditions. As a basis of that is practicable, we may take the case of the mineral line constructed by Mr. Carnegie and others to carry ore from Lake Erie to Pittsburg. This line is 156 miles long, and the cost of transport per ton mile was given me by Mr. Schwab, when I was recently in the United States, at 0·12d., or a little over 0·12d., per ton mile, a figure which may be compared with 0·99d. per ton-mile on the North-Eastern Railway, which is the greatest of our mineral carrying lines. In other words, the English average is fully eight times the American. The actual gross receipts of British railways from mineral traffic are nearly 20 millions sterling per annum. A very large part of this great sum is an unnecessary charge on the iron and steel industries, in the sense that under other conditions the cost of transport could be greatly reduced, as American experience has proved.

132.—It is announced that in August, 1904, Pittsburg export rates will advance, on billets, sheet bars, slabs, &c., by 2s. 6d. to all four tidewater points, and on finished steel products, such as merchant bars, wire, plates, sheets, &c., by five cents. a hundred, or 4s. 7d. per ton of 2,240 lb. Rates to Baltimore are less than to Philadelphia, and to Philadelphia are less than to New York, but the tonnage is more or less distributed, because vessels cannot be had so often at the points to which the rates are lower. The difference between domestic and export rates is the same to each point.

133.—In Germany, mineral rates are generally a good deal lower than here, although not so low as in the United States, except where export business is concerned. The fact that the German railway administration is in the hands of the Government, and that they are anxious to encourage exports, often leads to very low rates.

134.—The German-Levant line of steamers, in conjunction with the German State Railways, recently issued a supplementary tariff for iron, steel, and machinery from inland places in Germany to the ports of Smyrna and Alexandria, and to certain other places in Africa and Syria. These through rates, thanks to the facilities afforded by State-ruled railways, are almost the lowest railway charges existing in the world; they are for certain classes of goods only, some of them by no means what are usually regarded by railways as cheap for heavy traffic, and available only by one particular line of steamers, and for certain specified ports.

135.—The railway part of the through traffic is carried for about one-fifth of a penny per ton per mile; for the lower classes somewhat less, viz., 0·180d., which is lower even than American coal rates, and much below the figures given by the lowest of the other Levant rates, similarly tested. The differences of distance are, 368 miles between Kattowitz and Hanover, and 270 miles between Kattowitz and Dortmund, and this gives a ton mileage for the railways of :—

	Class A	B	C	D
Pence	0·182	0·180	0·208	0·204

136.—These are not for coal, nor for pig iron only, but for the goods as set out in the classification generally. For the 480 miles from Silesia, 7s. 3d. per ton is the rate for Class A.

137.—The coke supply for the minette districts of Lorraine and Luxemburg is chiefly drawn from Westphalia, only a small portion coming from Belgium. The freights are as follows :—

	Per ton.
Bochum to Luxemburg	7s. 7d.
Bochum to Lorraine	7s. 6d.
Belgium to Luxemburg	4s. 5d. to 3s. 8d.
Belgium to Lorraine	5s. 2d. to 4s. 2d.

138.—Of the home German ores, minette is used the most extensively, and of this only the better kinds, on account of the great distance and heavy cost of transport. These contain 32 to 38 per cent. of iron, 6 to 8 per cent. of silica, and 10 to 18 per cent. of lime. The railway freight for this ore has lately been reduced to below 6s. per ton, and the price in the coal district is about 9s. per ton.

139.—Since the end of 1901, most of the American railway companies that serve the leading iron-making districts have increased their rates for the transport of minerals and finished or semi-finished products by 10 per cent. There appears to be a consensus of opinion that railway rates and charges are likely to increase rather than to decline still further. The numerous combinations, consolidations, and working arrangements recently adopted in the United States by the principal lines lend colour to this belief.

140.—The total tonnage of ships and barges on the Rhine is 2,733,000 tons, of which 50 per cent. is owned in Germany, 37 per cent. in Holland, and 13 per cent. by Belgium and other countries. The cost of carriage of iron ores from the Dutch ports to Duisburg and Ruhrort is about 1s. per ton, that to Neuwied being about 2s. per ton. The total freight to Dortmund and Hoerde amounts to 3s. 6d. per ton, whether conveyed by water or by rail.

141.—For fuel supply the Siegen furnaces rely chiefly on the coke of the Rhur district. The freights for coke are as follows :—From Herne to Wissen on the Sieg the distance is 92 miles, and the freight is 4s. 2d. per ton; from Herne to Creuzthal the distance is 73 miles, and the freight is 3s. 6d. per ton. The freight for coke from Wern to the Georg Marienhütte, a distance of 73 miles, is 3s. 5d.

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(b) POSSIBLE RAILWAY ECONOMIES.

- 1071 142.—Attempts are now in some cases being made to apply American railway methods and economies, especially in respect of larger locomotives, larger wagons, and larger loads, in English practice. The North-Eastern, the Caledonian, and the Lancashire and Yorkshire Railways have taken a prominent place in this new advance. Most of the leading British lines have recently given orders for wagons of larger capacity—usually of 20 to 35 tons—and it would almost seem as if this tendency were likely to create a considerable demand for iron and steel for wagon building purposes, although we cannot hope in this respect to rival the great wagon-building companies in the United States, which now consume annually 750,000 tons of steel in this way. About as low a percentage tare has been secured on the North-Eastern in a 20-ton wagon as in an all-steel 40-ton wagon, and it seems more than probable that the smaller capacities of 20 to 30 tons will chiefly be adopted in this country.
- 1072 143.—According to a recent letter I have had from Mr. Gibb, the North-Eastern system had then in operation 2,000 15-ton and 20-ton wagons, and 2,000 more were being built. The Board of the North-Eastern are animated by a spirit of progress that appears to be proving contagious throughout the mineral-carrying lines of this country.
- 1073 144.—An interesting comparison recently made of the average proportion of paying load to tare the weight of loaded wagons shows that here it was only about 72 per cent., whereas the proportion of the Pennsylvania Railway was about 150 per cent., and the New York Central proportion was 108 per cent. The estimated average proportion of paying load to dead weight of wagons on the London and North-Western was 46·2 per cent., against 85·2 per cent. on the New York Central, and 94·6 per cent. on the Pennsylvania. The London and North-Western Railway Company, in order to move 968 million tons of mineral one mile, hauls 618 million tons of tare weight, while to haul 1,530 million tons of revenue freight one mile, it has to haul, under existing conditions, not less than 2,118 million tons of dead weight. The average tare weight per wagon used on the London and North-Western Railway for mineral traffic is given as 5 tons 9 cwt., which is relatively much more than the tare of the wagons used on the American lines.
- 1074 145.—The average weight-bearing capacity of the wagons owned by the London and North-Western Railway Company in 1900, was stated * to be 7 tons, and the average tare weight was 5 tons 6 cwt. 3 qrs. This Company, in the twelve months ended June 30, 1902, had a loaded wagon mileage of about 281 millions, which represented a total tare of merchandise wagons moved one mile of 1,499 million tons. So far as mineral wagons are concerned, this Company in the same period hauled one mile loaded mineral wagons having an aggregate tare weight of 618½ million tons.
- 1075 146.—Another possible source of economy is the filling of wagons that carry timber to collieries with return loads of coal and coke. At present wagons that load timber at ports for collieries return to the ports empty, for the most part. The timber could be loaded into coal wagons and the coal into timber wagons if greater diligence were used to avoid empty wagons and train mileage. Again, it is an everyday occurrence to find empty mineral wagons destined for one colliery passing the empty wagons of another colliery going in the opposite direction, whereas if both sets of wagons were placed under railway control, the empty wagons in both cases would be sent to the nearest colliery, and the minimum amount of empty wagons mileage thereby incurred. This is mainly a function of the law which enables a trader to place on railway lines any such wagons as conform to specifications.
- 147.—It has been computed that the mineral ton-mileage of the London and North-Western Railway Company, assuming an average rate per ton-mile of 0·7d., was, for the year ended June 30, 1902, over 968 millions; that the loaded mineral wagon mileage was about 107½ million tons; that the average wagon load was 9 tons, the average tare weight being 5¾ tons.

(c) WATER TRANSPORT.

- 1076 148.—So far as water transport is concerned, the United States have a decided advantage over Great Britain. I have compiled from semi-official records the rates charged for the transport of Lake Superior ores from Marquette to Cleveland (Lake Erie) for the last sixteen years. The distance is close on 850 miles, and the average contract rate is a fraction under a dollar, but for the three years ended 1899 the average was only 2s. 9d. per ton. From other ports at the head of Lake Superior, the average has been 3s. 9d. for ten years. Over the same period the average freight rate charged for the transport of iron ore from Bilbao to British ports, a much shorter distance, has been rather over than under 5s. per ton. The conditions are, of course, greatly different in volume of traffic, which in the case of Lake Superior has been from 20 to 28 million tons, and in the case of Bilbao ore, from 5 to 6 million tons per annum.
- 1077 149.—The maxima and minima of the Lake Superior freight charges in the period 1887-99 were as under for an average of nearly 850 miles—

				Maxima.	Minima.
				Dols.	Dols.
Iron Ore..	..	..	net tons.	1·75	0·60
Coal ..	..	..	"	0·90	0·25
Pig Iron ..	..	..	"	1·45	1·05
Manufactured Iron	..	..	"	2·35	1·40
Copper ..	..	..	"	2·60	1·40

VII.—IMPORTS AND EXPORTS.

- 1078 150.—In order to inform the Commission as to the movement of the iron and steel trade in imports and exports, I can not perhaps do better than hand in some copies of my Annual Statistical Report to the British Iron Trade Association for the year 1902, that for 1903 not being as yet quite available. The general facts are that our imports have of late years enormously increased, while the volume and value of our exports has over a considerable period been comparatively stationary, and in respect of markets other than our own Colonies, have been persistently retrogressive.

Imports and
Exports.

* Paper read before the International Railway Congress by Sir C. J. Owens.

151.—The increase in our imports of iron and steel has been very striking. In 1860 our total was 56,683 tons; in 1870 it rose to 102,069 tons; in 1880 it was 275,407 tons; in 1890 it was 323,840 tons; and in 1903 it was 1,299,000 tons. It will be noted that the movement was a more or less steadily progressive one, which culminated last year in the greatest volume of iron and steel imports on record.

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152.—It may be here noted that in the earlier history of the trade relatively large quantities of iron and steel were imported from Russia, Sweden, France and Spain, and that in some years our imports exceeded our exports.

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153.—In 1903 our exports of iron and steel were about three times the volume of our imports, and more than three times their value. In 1900, our exports were twelve times the volume and seven times the value of our imports.

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154.—During the last few years there has been a notable change in the character and conditions of our iron and steel import trade. In former years it was less strictly competitive than it has now become. Up to about 1885, our principal imports consisted of Swedish bar iron which was designed for use in our crucible steel industry, and was, in effect, a high-class and special raw material, which was not produced of kindred quality in Great Britain, and was non-competitive. Since then, the imports of bar iron of this character have relatively much declined, and the business is now chiefly made up of products that are in every sense competitive, such as blooms and billets, general merchant and structural steel, steel rails and plates, and other descriptions which are sent into our markets, not because we cannot produce them equally well, but because it suits the nations concerned to export them into a market that is open to all and sundry, without let or hindrance.

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155.—Up to the year 1885 we imported a considerably smaller quantity of iron and steel than the United States, Germany, France or Belgium. To-day we import larger quantities of iron and steel than any other nation, and our normal imports may be regarded as three times that of any country in Europe.

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156.—Between 1880 and 1885 there was a large increase in the importation of rolled girders into this country which led to the belief that British iron and steel manufacturers were inferior in the skill and commercial capacity needed in this branch of industry. This belief was all the more unsatisfactory because it was also understood that Continental rivals made the girders which they supplied to British markets from pig iron which was largely imported from our own Cleveland district. Some authorities, however, have properly pointed out that foreign engineers and architects prescribed girders in ordinary buildings to a much larger extent than was then done in this country, that excellent girder mills were built for its manufacture, that large stocks of different dimensions were kept on hand, and that the smallest or the largest orders could thus be executed on very short notice. To a large extent these are still the controlling factors in the situation, but much less so than formerly. British girder manufacturers have now come fully abreast of their Continental rivals, and they will be materially aided in their competition by the new system of standard specifications and sections. So recently as 1899, however, a leading iron merchant in this country declared that "there was no machinery (in England) equal to producing the large size girders effectively dealt with in German works."

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157.—The imports of iron and steel into Great Britain have considerably more than doubled during the last five years. The total in 1897 was only 516,455 tons, which in the following year rose to 591,425. Since then, as we have seen, the total has increased to over 1,270,000 tons. It is usual to speak of the difference between these two figures as "dumping," as to which I shall have more to say later on.

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158.—The increase is mainly made up of unworked steel—blooms, billets, and bars—of which in 1898 we only imported 109,000 tons, but in 1903 we received over 466,000 tons. The upward movement began in the early part of 1899, and coincided with a large increase in the output of the steel works of Continental countries, and more especially of Germany.

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MOVEMENT OF IMPORTS AND EXPORTS OF THE UNITED STATES.

159.—The following table shows the American production of pig iron, and the imports and exports of iron and steel manufactures in the calendar years 1900, 1901, and 1902:—

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Year.	Pig Iron produced. Tons.	Imports of Iron and Steel Manufactures.	Exports of Iron and Steel Manufactures.
1900	13,789,242	\$20,443,911	\$129,033,480
1901	15,378,354	20,394,995	102,539,787
1902	17,821,307	41,468,826	97,892,936

The above table hardly conveys a clear idea of the real increase in the American consumption of the cruder forms of iron and steel. For instance, the imports of pig iron in 1901 were 62,930 tons. In 1902 they were 625,380 tons, nearly a ten-fold increase. Scrap iron and steel imports increased from 20,130 tons to 109,510 tons, while the imports of bars, hoops, ingots, sheets, and tinplates increased from 304,000,000 to 927,000,000 lb., or more than 3 to 1. Billet imports increased from 18,286,653 lb. to 642,478,764 lb., or at the rate of 35 to 1.

160.—Since 1902 there has been a collapse in the American iron trade, which has led to a large decline in imports, while the exports have not so far been greatly affected.

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161.—The great importance of British markets to the United States is shown by the following statement of exports of machinery, &c., from that country:—

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<i>Exports from United States, distinguishing those to British Markets.</i>		1 - 1,000 dols.
	Total Exports of United States. Tons.	Per cent. of Totals to British Empire.
Agricultural implements ..	21,006	37
Freight, &c., cars ..	8,366	58
Hardware and tools..	12,064	60
Electrical machinery ..	5,779	70
Locomotives ..	3,219	43

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162.—The exports of iron and steel from the United States for the last two years have been on a much smaller scale than those of the three immediately preceding years. They did not, in fact, amount to more than one-ninth part of those of Germany, nor did they equal a tenth part of our own. The chief items were wire, rails, and structural steel. Rails are the only one of these items in which we have hitherto enjoyed pre-eminence of export. Structural steel and wire have generally been the weak points of the British iron industry. In rails, British exports have usually exceeded those of any other country.

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163.—The export trade in iron and steel is in all countries liable to remarkable fluctuations. No better example of this fact could be afforded than the recent statistical history of the United States. The imports into that country in 1902-3 were three times the average of the five previous years, while the exports fell to less than one-half of what they had been in 1899-1900. It has been the same in Germany and in our country. The greatest volume of exports ever reached in the British iron trade was 4,353,000 tons, in 1882. No subsequent figures have touched this record. But only four years before the volume of the same exports was not more than 2,296,000 tons, so that the figures had practically doubled within this period. In the case of the German iron trade, the exports of 1903, which were within 8 per cent. of those of Great Britain for the same year, had doubled within eight years. Such cases might be multiplied. They all point to the great uncertainty, under existing conditions, of both the import and the export trade, alike in free trade and in protected countries.

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164.—These remarks apply with special force to the general volume of foreign trade. There are, of course, particular cases in which they are not so applicable. One such case is that of the imports into this country of Swedish bar iron, which for certain purposes has not yet been displaced. Another such case is that of our exports of tinplates to the United States up to the passing of the McKinley tariff in 1890. In both these cases the business done had much of the character of a monopoly. Here, however, their identity ceases. The Swedish bar trade has been reduced by the substitution of open-hearth steel of high quality produced at home. The Welsh tinplate exports to the United States have been reduced from a maximum of 448,000 tons a year to a minimum of about 50,000 tons by the building up of a rival industry on American soil. The case of the imports of pig iron into Germany differs from both. In each of the years 1899 and 1900, the Germans imported, mainly from this country, about 660,000 tons of pig iron, which in 1901 was reduced to 267,503 tons, and has since been further diminished, owing to the increased resources of production created in Germany herself, but not as a result of increased protection.

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165.—The history of the iron trade further proves that much may be done to consolidate an export trade by giving special attention to the conditions required for the cultivation of individual products. As a matter of fact, each country that has a considerable export trade has been largely aided by attention to this point. The principal features of the export iron trade of Great Britain are pig iron, plates and sheets. Those of Germany are blooms and billets, structural steel and wire. Those of the United States, in so far as they can be estimated, are rails, wire nails and one or two other descriptions.

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166.—The most remarkable feature of the recent international movement of iron and steel has been the increase of business done by Germany, and mainly in respect to the export of blooms and billets. This has been cultivated by the Germans as a special trade. They produce more than two million tons annually for sale, and send a large part of it abroad. There is no exact record of the quantity of blooms and billets produced in this country, as such, but it is not likely to be more than a third that of Germany. Our annual exports of unwrought steel are now about 275,000 tons a year, which falls much short of the 630,000 tons exported from Germany.

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167.—The German exports in 1901 of wire and steel railway sleepers and fastenings were over 47 per cent. of the total output. The exports of general merchant iron and steel were over 35 per cent. of the total output, and the exports of axles, tyres and wheels were over 33·4 per cent. of the output. But the most remarkable case of all is that of plates and sheets, of which the export ten years ago was almost nominal, while the import was considerable. In 1901, the output of this description was over 810,000 tons, and the exports were 31½ per cent. of that figure. The details are given in the following table:—

Production and Exports of the principal Descriptions of Iron and Steel in Germany, showing percentage of Production exported.

Description.	Production. Tons.	Exports. Tons.	Proportion of output exported. Per cent.
Rails and fastenings	849,351	180,978	21·3
Sleepers and do.	203,318	97,187	47·8
Axles, wheels and tyres	147,459	49,286	33·4
Plates and sheets	810,868	255,627	31·5
Wire	522,771	247,758	47·3
Merchant iron and steel	2,441,296	855,354	35·0

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168.—German exports have increased during the last three years alone by 126 per cent., and the increase in 1902 alone exceeded considerably the total German exports of iron and steel less than ten years ago. From the British point of view the facts may be put in a still more striking aspect. In 1890 the British exports of iron and steel amounted to 4,001,000 tons, while the German exports were 775,000 tons. That is to say, the German exports were then less than one-fifth of those of the United Kingdom. In 1901, the total German exports of iron and steel were still 919,000 tons behind our own. But in 1902 the German exports rose to a higher figure than the total British exports of iron and steel in the previous year, and came almost abreast of the total British exports in 1902. In 1901 our total exports of iron and steel were 2,897,000 tons. In 1902 the German exports were 3,186,250 metrical tons.

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169.—The proportions of the pig iron output of different countries exported in 1902 have been as under, reducing all exports to terms of pig:—

	Production. Tons.	Exports. Tons.
United Kingdom	8,518,000	4,660,000
Germany	8,403,000	4,437,000
France	2,427,000	504,000
Belgium	1,069,000	779,000
Austria-Hungary	1,710,000	120,000
United States	17,821,000	425,000

170.—It has been argued that if we can, through dumping, secure cheaper supplies of raw or semi-raw material than competitive countries, we should be able to beat those countries in neutral markets. Statistics do not entirely support this view. The exports of German steel, as already stated, have doubled within the last few years, and are now nearly on a level with our own, although twenty years ago British exports were eight times those of Germany. The fact is that while dumped steel may easily break the British market and entirely disorganise British conditions, its volume may not be either absolutely or relatively sufficient to greatly influence general competition.

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171.—The agitation that was carried on against dumping some time ago was partly founded on a more or less imperfect ascertainment of essential facts. While it was in vigorous progress, a correspondent sent me a list of twenty-nine iron works in South Wales which were alleged to have been closed by dumping, and requested me to give the true facts of each case. These, shortly, were that four-fifths of the works on the list were either old finished iron works, or obsolete tinplate works, and in both cases dumping had nothing to do with their becoming derelict. South Wales, thirty years ago, produced well on to a million tons of finished iron annually. To-day the output is not 30,000 tons. The place of finished iron has been taken by steel, and the revolution has necessarily led to a number of the old works being closed. In the case of other works, they were unfavourably situated, or had been allowed to get so far behind the standard of present-day efficiency that they could only have been profitably worked under extraordinary conditions. That the rank and file of the trade had a certain confidence in the future is proved by the fact that within the last fifteen years about twenty-six steel works have been built in this district, whose capacity for producing steel to-day is twice as great as its greatest capacity for the production of finished iron in the past.

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172.—There are many outside markets that would be likely to be more readily available to our trade under a system of Customs duties effectively applied. The Colonial markets generally are in this category. Canada is the most striking case of all. The Canadian consumption of imported iron and steel is now larger than that of any market in the world, except our own home market, amounting, as it does, to nearly a million tons a year. Fifteen years ago, over 70 per cent. of the Canadian iron imports were supplied by this country. To-day we supply less than 30 per cent. The balance is supplied by the United States and Germany—about 600,000 tons by the former, and 60,000 tons by the latter.

1100

173.—It is natural to suppose that the Americans have much cheaper access to the Canadian markets than the Mother country. That is not necessarily the case to any important extent. The railway rate from Pittsburg, the chief centre of the American iron trade, to New York, a distance of 444 miles by the shortest route, is 2 dol., 80 cents. (say 11s. 3d.), and Montreal, the chief centre of Canadian business, is nearly as far again, so that the rate thither (which I do not know) must be materially greater. The same remark applies to Toronto, Hamilton, London (Ont.), Quebec, and other centres of Canadian trade and population. Now, these rates run fully as high as normal ocean freight rates for British goods, so that the American gain in cheap transport is not quite apparent. Of course, if iron or steel were sent into Canada from the Southern States the freight would be greater still.

1101

174.—Two alternatives present themselves—either the Americans produce and sell iron all round much more cheaply than is done in this country, or they send a large surplus into Canada as their most convenient market under dumping conditions. The Canadian manufacturers, who resent the present condition of things, allege the latter to be the true explanation, and that view is supported both by direct evidence furnished to the Industrial Commission, and otherwise available, and by the nominal range of iron and steel prices in the United States over the last five years, which has been materially above the range of British prices. I do not hesitate to say that if the Canadians had been charged the same prices as were nominally charged on the other side of the line, hardly any American iron and steel would have found its way into Canada during the last five years in competition with the cheaper prices quoted for British material. The same remarks apply, *mutatis mutandis*, to our trade with India and the Australasian Colonies, in which Germany and Belgium have in recent years been our keenest competitors.

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175.—The general complaint made by home manufacturers is that dumping lowers home prices, and, to use Mr. Carnegie's phrase, "breaks" the market. This is the tendency, but it is not always the fact. The prices of steel rails, for example, have kept up in this country to a higher price than would have been possible if dumping prices had been followed. It has been the same with one or two other products. But exceptions do not make the rule, which is that in ordinary competitive business home prices must follow foreign prices in home markets. In other words, where dumping has a large hold, home producers have great difficulty in either fixing a price or in maintaining it. This naturally discourages enterprise, and in extreme cases may induce despair.

1103

176.—A good deal has been made of the fact that dumping enables manufacturers of galvanised and tin-plates to produce more cheaply than they could do if the system did not exist. This is a natural inference, but it requires more demonstration than I have yet seen. Hitherto, we have almost had a monopoly of these two branches of trade, and that monopoly has not yet to any serious extent been broken. Wire rods have been dumped on our market at very low prices, and yet I am not aware that this fact has stimulated our wire industry. If Americans could get their labour costs of tinplate production down to the British level, I do not think that the difference in South Wales between home and foreign steel would prevent them from going far in occupying British markets, and so to a large extent with galvanised sheets.

1104

177.—For the last two years the principal contributor of iron and steel to British home markets has been Germany. Some two years before that the United States ran Germany more closely. Of machinery, as such, the United States still supply us with a larger value than any other country. This, however, is probably not entirely an unmixed evil. It is even possible that it may be a very real help. American machinery has been helpful in modernising and economising our processes of manufacture in many different lines of production. The danger is that its use may create a prejudice in its favour, as against English machinery, that may be unfair and detrimental to English producers, and that American plant may thus have found, on this side of the Atlantic, a settled home. During the last five years we have imported into this country more than 13½ millions sterling worth of American machinery. These figures represent a larger business than has ever before been done within the same interval in the international trade relations of any two countries in the item of machinery alone. Over this interval, also, we have drawn machinery direct from Germany to the extent of 2,438,000 sterling, and through Holland—mainly from Germany—to the extent of £1,009,000. In the first year of the series our machinery imports from Germany and Holland were valued at £477,000, while in the last of the series the value had risen to £1,039,000.

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178.—In Germany various syndicates have in the past combined among each other in order to grant export bonuses. Thus the Union of Semi-finished Steel fixed upon an export bonus per ton as much as 33 l. 3 per cent. of the amount of ingots used from the works of the Union. Of this the Coal Syndicate bore 5s. The Pig-Iron Syndicate allowed its customers an export premium of 10s. per ton; the Merchant Iron Union one of 20s. The Merchant Iron Union, at the same time, created an export league for merchant iron, which fixed the prices for export upon a scale varying considerably from that for home consumption. While the Coke Syndicate asked 15s. per ton at home, it simultaneously effected heavy sales abroad at 11s. per ton. The Rail Syndicate is said to have sold rails to foreigners 30s. cheaper than to German customers. The Union of German Wire Manufacturers sold in the second half of 1900 at home 22,000 tons, with a profit of £58,850; to foreign parts 19,000 tons, with a loss of £42,950; i.e., it received on the home market £12 10s. per ton, and sold to the foreign country the same quantity for £7. This policy not unreasonably formed the subject of a complaint addressed to the Government by the shipping yards on the Lower Rhine, declaring that they could no longer compete with Holland, which received the German material at much lower prices.

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179.—Again, the Coal Syndicate calculated for a recent year that it distributed 30,000,000 tons of coal, and granted premiums amounting to £850,000 on its normal prices for export. The Courts at Gottesburg had evidence brought before them that the Coke Syndicate had sold to Austria blast furnace coke at 8s. 1d. per ton, while charging 17s. at home.

1108

180.—The following figures show how home and export prices compared at a recent date:—
German Home and Export Prices in December, 1903.

	Home.		Export.	
	s.	d.	s.	d.
Angles	111	0	100	0
Bars	111	0	97	6
Merchant sheets ..	122	6	102	6
Rails for railways ..	135	0	93	6

Here there is a difference of 41s. 6d. in favour of the foreigner in the case of rails; of 20s. in the case of sheets; of 13s. 6d. in the case of bars; and of 11s. in the case of angles.

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181.—The Annual Report of the British Iron Trade Association for 1902 shows that in that year, and in the year 1901, iron and steel, and the products thereof, were imported into this country to the extent of over 32 millions sterling, or more than 16 millions sterling annually. Assuming that there was an average profit of 15 per cent. over the whole of this business, including producers, distributors, merchants, etc., I have estimated that the distribution of the figures may have worked out approximately thus:—

	£
70 per cent. paid as salaries and wages, in all categories of labour, say	22,000,000
15 per cent. standing charges, rates, taxes and public burdens of all kinds, royalties, freights, depreciation, &c.	5,000,000
15 per cent. profits of mine owners, iron and steel manufacturers, merchants, freighters and others	5,000,000
Total	£32,000,000

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182.—In adopting 70 per cent. as the cost of labour, I am largely assuming a figure that cannot be exactly ascertained, but it is intended to include the wages paid to all classes, from the moment that the first pick is used in the development of the mine to the moment when the most highly-finished products enter the yards or shops of the ultimate customers, including the labour employed on railways, canals and shipping. I may add that I have further estimated the total number of hands employed in producing these products, adopting the same basis, at 114,782, of which 25,000 are assumed to have been employed in producing raw materials.

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183.—The general impression created by the recent history of dumping has naturally been that this country is unable to produce so cheaply as Germany and the United States. This, however, must not be taken as granted. I have had cost-sheets put before me showing that in three districts in this country pig-iron has been produced with profit within the last twelve years for 32s. per ton. For many months steel rails have been sold in this country for less than £3 15s. per ton. Sir C. Furness recently declared that a firm in the Cleveland district, which he did not specifically name, but which it is not difficult to identify, could make billets at 60s. per ton, which is a lower figure than I have ever heard of for the Continent, and comes to Mr. Schwab's irreducible minimum of 12 dols. for American rails. This home cost, however, involves conditions which are not general in this country, although they may be made much more so—such as ownership of iron mines and collieries, private wharves, the utilisation of by-products from coke-ovens and blast furnaces, and other sources of economy which have either been largely neglected in this country or been applied only to a limited extent. If all British works were on navigable rivers, or on the seaboard, the economic results would be different, but that condition cannot be realised without heavy sacrifice and outlay of capital.

1112

184.—It may be noted that Protection does not necessarily secure immunity from dumping. This fact is illustrated in the relations of the United States and Germany in 1899 and 1900, when the United States went a long way in the direction of capturing the German market for steel rails, having exported thither, in 1900, more than 250,000 tons, as well as over 200,000 tons of other steel. In short, the Germans had then to reckon with American competition quite as much as we had ourselves. The future of the German iron industry was then, and is still, causing concern to those who do not see their way to meet the serious competition, actual and threatened, of American manufacturers.

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185.—In all countries alike, the resources of production in the iron trade are generally largely in excess of actual needs, and this factor, as tending to depress prices and stimulate competition, including dumping, should not be overlooked. Some weeks ago the *Iron and Coal Trades Review* published a list of the open-hearth plants in this country and their capacity, showing that they were equal to producing twice the quantity hitherto required in any one year. We have still in this country over 70 Bessemer converters for an output of about 1,750,000 tons of ingots, although in American practice a four-converter plant can easily produce one-half a million tons annually, at which rate 16 to 20 converters should be able to produce under up-to-date conditions the work for which 70 are now available. Our register of blast furnaces contains several hundreds that are not employed, and are never likely again to be employed, under normal conditions.

186.—But the most remarkable facts bearing upon this aspect of the steel trade must again be borrowed from American experience. The capacity of American steel works is probably twice the actual output. The total number of rail mills there is officially stated to be 48. And yet, the two rail mills at the Edgar-Thomson Works of the Carnegie Steel Company, near Pittsburgh, recently produced in one month 61,000 tons of finished rails, which is at the rate of 732,000 tons of rails a year for this one plant. Assuming that this rate could be maintained, three or four plants, or six to eight mills in all, should be able to produce the total steel output of the United States. Equally phenomenal is the rate of output of steel ingots. At the Edgar-Thomson Works, four converters of 15 tons capacity have produced 3,000 tons of ingots in 24 hours. At this rate, the capacity of this plant, if maintained for 311 working days, would be 933,000 tons a year, or one seventh of the total Bessemer steel output of the United States in 1900. As only three converters are generally employed at one time in a 4-vessel plant, the actual work of producing the Bessemer steel ingot output of 1900 may thus be done by 21 converters, whereas the total number actually built in the United States at the end of 1901 was 81. Allowing one reserve vessel to each 4-vessel plant, the full number required to produce the Bessemer output of 1903, which was over 9 million tons, on Edgar-Thomson precedents, would be under 40, or less than one-half of the total number in existence to the end of 1901.

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187.—The British iron trade has suffered more than that of competitive countries by the withdrawal of capital, especially in the form of profits. Here there is a tendency to apply profits made in the iron trade in buying land or in some extraneous business. Profits in the United States have largely been re-invested in plant, so that American iron and steel manufacturers have seen their investments increasing at compound interest, while British manufacturers and company shareholders have often been so eager to draw out their interest that they have already lost some of the principal, and may lose more. This partly explains why in most lines the American plants can show the greater economy of production.

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188.—Surprise has been expressed that there has been so limited an export from the United States since the collapse of last autumn, and that American exports are so far below the level of three or four years ago. The Pittsburgh correspondent of the *Iron and Coal Trades Review* has recently stated that there are reasons to believe that the United States Steel Corporation is decidedly disappointed at the results achieved in their efforts to dump crude steel, such as billets, slabs, sheet bars, etc., in England. The prices realised f.o.b. works, even with special export freight rates, are quite unsatisfactory, averaging, perhaps, some 14 dols. per ton f.o.b. at Pittsburgh for sheet bars, or £2 17s. 6d. On some business the Corporation is believed not to have realised over £2 16s. 6d., or £2 17s. There are said to be evidences that as a general plan it is desired in the future to export more finished products, such as plates, sheets, tinplates, &c., and to increase the exports of wire. It must not be overlooked that in 1899 and in 1900, when American iron exports ran up to so high a figure, the Steel Corporation was not in existence, and its hungry shareholders had not to be fed with profits. The dumping of those days was largely due to individual initiative. The dumping of the future must be justified to shareholders. Of course, the higher prices of highly-finished products will show a lower percentage of total price expended on freights, &c.

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IX.—TRUSTS, SYNDICATES, AND BOUNTIES.

189.—As the subject of the influence of trusts and syndicates on the general situation of the iron trade is at present occupying, and has for some years occupied, a good deal of attention, it may be expected that something will be said as to the views taken of it by the British iron industry. That subject has never been formally considered by this Association, and individual members differ widely in their opinions. At the outset there was a general belief that the organisation of the United States Steel Corporation and other kindred consolidations would be prejudicial to British trade. That opinion does not now appear to be held to the same extent as formerly, and, indeed, there are not a few who hold quite an opposite view. One of my colleagues on the American Commission has stated that he regards "the preponderance of the Steel Corporation" as "very fortunate for the British and European iron trade." Others have expressed the same view as to the more recently-formed German *Stahl Verband*, which, indeed, has distinctly declared that it intends to assimilate home and foreign prices more closely than they have hitherto been—in other words, that there will be less iron and steel thrown upon outside markets at what are commonly known as "dumping" prices.

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190.—It seems to me that the security of the British iron trade, in relation to syndicates and consolidations, if it exists at all, is founded on two conditions—the first, that such organisations as the Steel Corporation must make sufficient profits to pay interest on a huge over-capitalisation, and must for that reason keep prices up to a fairly high level; and the next, that if they were to sell abroad greatly below that level, home consumers would be likely to agitate against a system that benefited the foreigner at their expense, as, in some cases, they have already done. This consideration equally applies to the new German *Stahl Verband*. This does not necessarily mean that the days of dumping are at an end. But it means, I think, that the dumping of the future will be held more or less in check, and must be regulated by prudential considerations.

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191.—The greatest home of the kartell and the syndicate is Germany. Most commodities produced there on a large scale has its own special syndicate. That is, perhaps, more true of the coal and iron trades than of any other, but, at any rate, so far as these trades are concerned, there is a syndicate for every article that is large enough to be organised. There are coal, lignite, coke and briquette syndicates; pig iron, foundry products, finished iron, and steel syndicates; trusts also for steel forgings, steel castings, wire, old iron, pipes and tubes, rails, plates, sheets, girders, and other products. And not only so, but district syndicates exist in a number of cases, so that there is more than one organisation for the same product. Coal, for example, is under the control of four syndicates—in Rhineland-Westphalia, in Upper and Lower Silesia, and in Zwickau-Oelsnitz. The pig iron trade is regulated by separate trusts in Rhineland-Westphalia, in Lorraine-Luxembourg, in Siegerland, and in Upper Silesia. Plates and sheets are controlled by separate syndicates, besides four other syndicates for rolling mill products generally. Wire, again, is under regulation by three different syndicates, briquettes by three, blooms and billets by two, and so on. A recently-published list gave particulars of 46 different syndicates in the coal and iron trades alone.

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192.—In the United States, the syndicate which was the rule a few years ago, has given place to the consolidation, so-called, which means a union under the same proprietary, of a greater or less number of different establishments. The greatest of these is the Steel Corporation, founded in the spring of 1901, with a capital of about 230 millions sterling, which has since then been increased to about 280 millions, and which in the last two years, produced nearly one-half of all the pig iron and more than one-half of all the steel turned out in the United States. The ostensible objects of consolidation are the control of production and prices, and economy of production resulting from the cutting down of many expenses which are more or less duplicated in individual concerns.

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- 1121 193.—So much has been written and said about this vast enterprise, that it seems needless that I should say much about it here. The highest authorities hold that there is scarcely a question that the capitalisation of the Steel Corporation represents from three to four times the capital ever put into the mines, transportation lines, and the works and plants of every kind that it controls and operates through its constituent companies; but until lately it paid 5 per cent. upon a volume of bonds lately increased to more than 550,000,000 dols., 7 per cent. upon preferred shares now fixed at 350,000,000 dols., and 4 per cent. upon 550,000,000 dols. of common stock, and had accumulated a large surplus from the residue of net earnings. I have already indicated a belief that the Steel Corporation is not likely to be so hurtful to European business as was at one time anticipated.
- 1122 194.—In the United States hardly any of the new combinations cover the entire field which it professes to occupy. Even the Standard Oil Company only produces about 65 per cent. of the total output of refined petroleum in the United States. Nor does it appear that the tendency is always to shut up factories that remain outside the combination. It has been pointed out that when the rubber shoe industry was consolidated in the United States, some of the factories were closed, but others were started on more modern lines, so that the total number of factories has not decreased. It has been the same in the steel industry. There probably never was a period when so many independent concerns were started in the United States as there has been since the Steel Corporation was launched.
- 1123 195.—Indeed, experience has shown that combinations do not necessarily drive smaller independent concerns out of the market. A concern which is well organised has the whole country, perhaps the whole world, for a market, so that a combination seeking to drive out even a small competitor would have to cut prices over a very much wider area than would be either convenient or advantageous.
- 1124 196.—The principal points to which I think the attention of the Commission may suitably be called in summing up this matter are the following:—
- 1.—That there is no reason to apprehend that Great Britain, under equitable conditions, should not be able to hold her own in the competition of nations for the iron trade for the world.
 - 2.—That there is no conclusive proof that the iron trade of this country has reached its maximum possibilities of profitable development, inasmuch as, if our own home supplies failed, no other country is more favourably situated for importations from abroad.
 - 3.—That the general proximity of ores and fuel in this country should go far to offset any inferiority in our relative command of cheap raw materials, but that such natural advantage is neutralised by high railway costs at home and conferences of steamship lines abroad, as well as by heavier royalties and wayleaves.
 - 4.—That the British iron and steel industries have suffered severely from a want of confidence in their future, which has prevented the necessary capital from being applied to their up-to-date development.
 - 5.—That the development of the basic process of steel-making in this country has also been discouraged and retarded by the refusal of many consulting engineers to place basic and acid steel on the same level as is done in Continental countries and in the United States.
 - 6.—That there is good ground for believing that the United States will not in the future be able to produce iron and steel so cheaply as in the past, partly from the exhaustion of the cheapest supplies, and partly because the Steel Corporation must meet financial obligations that will render bottom prices difficult.
 - 7.—That on a comparison of public burdens affecting industry, there is reason to believe that there is not much difference as between Germany and Great Britain, while Federal burdens, to a large extent, and local burdens, tend to become more onerous in the United States and other countries.
 - 8.—That the higher wages paid in the United States coincide with a higher efficiency of labour, which, however, is not necessarily unapproachable in this country except in so far as it is founded on what may be termed natural conditions.
 - 9.—That the dumping of foreign iron in British and Colonial markets has been a serious handicap to British exports, as witness the case of Canada.
 - 10.—That while our raw materials are both absolutely and relatively in a more advanced condition of exhaustion than those of our rivals, their best and cheapest available supplies have also been materially reduced, and it is possible that our relative inferiority or superiority need not become more accentuated.

ANSWERS TO QUESTIONS PROPOUNDED BY THE COMMISSION.

- 1125 Although I have generally dealt in what has preceded with the various matters that are germane to the inquiry before us, I have in the following paragraphs replied to the more important questions propounded in the printed forms issued by the Commission. Some of the questions I have omitted to notice, either because I was not prepared to answer them, or because I regard them as having been sufficiently answered in my previous statement.

- 1126 *Answer to Question 16.*—The British iron trade has advantages over other countries in the geographical relations of its ores and fuel, excepting on the West Coast, where the fuel has to be rail-borne for about 100 miles, at a cost of 7s. 6d. per ton. But the character of British ores is generally inferior to those of the United States and Germany, 80 per cent. of our home ores not exceeding 32 per cent. of iron, whereas the American average will be over 50 per cent., and the German nearly 40 per cent.

Ore Conditions.

- 1127 *Answer to Question 22.*—The cost of fuel at the pit's mouth is about the same in Germany and this country; in the United States it is 1s. to 2s. per ton cheaper; and in France and Belgium it is 1s. to 1s. 6d. per ton dearer. The conditions of distance already referred to modify these values at works in relation to the length of haul, which may be taken at approximately the following rates of freight per ton of coal or coke:—

Cost of Fuel.

GREAT BRITAIN—									
		s.	d.			s.	d.		
Cleveland	..	2	0	to	3	0	Lincolnshire	..	4 0 to 5 0
Cumberland	..	7	0	„	7	6	Northamptonshire ..	..	5 0 „ 6 0
South Wales	..	1	0	„	1	6	South Staffordshire ..	..	1 0 „ 1 6
Scotland	..	1	0	„	1	6			

Cost of Fuel
—continued.

UNITED STATES—					s. d.		s. d.
Pittsburg	..	..	..	..	3 0	to	4 0
Alabama	..	..	..	..	1 6	„	2 0
Valley furnaces	..	..	..	..	4 0		
GERMANY—							
Westphalia	..	..	..	..	1 6	„	2 0
Lorraine	..	..	..	..	6 0	„	7 0
Luxembourg	..	..	..	..	6 0	„	7 0

1127 contd

Colonial Ores.

Answer to Question 23.—Although I have not myself smelted Colonial iron ores, I have been over some works where they are smelted, and have a general idea of their characteristics, so far as Canada is concerned. The greatest plant there is that of the Dominion Company at Cape Breton, which, although Nova Scotia has abundant ore supplies nearer at hand, draws its chief ores from Newfoundland, a distance of 150 miles, more or less, by sea. This ore is very cheaply mined, and costs under 6s. 6d. per ton at furnaces, after allowing for sea transport, but its chemical composition is such, that it requires a mixture to work well. I would here say that it seems to me a pity that English iron-masters did not obtain the control of this Newfoundland (Belle Isle) supply, which is estimated at more than 30 million tons, and which could have been imported here so as to be commercially profitable—probably under 10s. per ton, as a regular business, for a 50 per cent. ore.

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Trusts.

Answer to Questions 20 and 25.—If I understand Question 20, it is assumed that the control of ore supplies by syndicates is a benefit to the American iron trade, as to which I join issue. The situation stated is a distinct menace and discouragement to private enterprise by independent firms, and in the long run it is doubtful if syndicates promote the public weal in any way, or even their own. The effect produced by the Steel Corporation has been to greatly increase the value of iron ores, and thus to increase the cost of the production of iron and steel. As this result generally tends to reduce consumption, its “advantages” are not obvious.

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Preferential rates for export, on the other hand, tend to cheapen the price of the commodities to which they are applied at the place of ultimate consumption, and to this extent, Continental and American preferences have handicapped British manufacturers and made competition keener.

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Ore Costs.

Replies to Question 16.—The comparative cost of extraction of iron ores is only one of many considerations that enter into their ultimate value. The character and richness of the ore, its chemical composition and physical properties, its distance from fuel and from centres of production, and its relation to the total cost of the assemblage of materials, are all relatively important matters. Taking the figures as they stand, the costs of extraction, subject to these qualifying circumstances, will run approximately as follows:—

1131

GREAT BRITAIN—					s. d.		s. d.
Scotland	..	..	..	..	3 6	to	4 6
Cleveland	..	..	..	..	2 0	„	3 0
West Cumberland	..	..	..	..	5 0	„	8 0
UNITED STATES—							
Mesabi	..	..	..	..	0 8	„	1 3
Marquette	..	..	..	..	2 6	„	5 0
Gogebic	..	..	..	..	2 6	„	3 6
GERMANY—							
Lorraine	..	..	..	..	1 3	„	1 9
Luxembourg	..	..	..	..	1 3	„	1 9
BELGIUM—							
Home ores*	..	..	..	..	4 0	„	5 0
CANADA—							
Cape Breton	..	..	..	..	2 0	„	5 0
Lincolnshire	..	..	..	..	1 6	to	2 6
Northamptonshire	..	..	..	..	1 3	„	1 9
Alabama	..	..	..	..	1 6	„	3 6
Cornwall	..	..	..	..	2 6	„	4 0
Spathic	..	..	..	..	3 6	„	4 0
Other ores (average)	..	..	..	..	4 0		
Luxembourg	..	..	..	..	1 3	„	1 9
Newfoundland	..	..	..	..	2 0	„	2 6

Answer to Question 17.—The differences in the cost of extracting iron ores are not so much due to wages as to physical conditions and methods of working. Speaking generally, miners are paid about 1s. a day more in this country than in Germany, and 1s. 6d. per day more than in France, while in the United States they are about, or nearly, 1s. per day more than here. In Luxembourg, Lorraine, and Mesabi, the three greatest iron-mining centres in the world, the ores are chiefly quarried, while in Cleveland and in Cumberland, in this country, they are got from deep workings. Lincolnshire and Northampton, and one or two other minor districts here also quarry. Mesabi ores are worked by steam shovels, which lift five tons at a time. This system could be applied in some localities here, but the quantity mined is too limited to have hitherto led to this method being adopted.

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Ore Freightage.

Answer to Question 19.—In this country the average freight charged per ton of ore from mines to quarries or furnaces is less than in any other. In some cases, in Scotland, the ore is mined within a few feet of the furnaces. In others, as in Cleveland, it is carried only a mile or two on private railways. In others, as in Cumberland, ore is sometimes worked within a mile or two of furnace plants. Even in Staffordshire, one of the greatest works has a 1s. 9d. rate on a haul of nearly 50 miles. In other districts the ore is mined within 10 to 20 miles of the furnaces. The average length of ore haul will not exceed 10 miles, and may be considerably less.

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In Germany, the bulk of the Lorraine and Luxembourg ores have a haul of 100 to 150 miles to furnaces, except where smelting plants, close at hand, have the fuel carried equal distances, subject, in one or two cases, to fuel being used from the main coalfield of the Saar. As a rule, either the ore or the fuel has to be carried at least a hundred miles.

In the United States, the ore of the Lake Superior region, the source of three-quarters of the total iron made, is carried about a thousand miles, of which 160 to 200 are rail and the rest water transport. Works are generally within 50 miles of fuel.

In France, the bulk of the home ore used is carried only a few miles—that is in the Meurthe-et-Moselle generally—but considerable quantities have to be carried to inland works, such as Creusot, from 200 to 300 miles by rail. Fuel is close at hand in the older districts, including Creusot, but has to be carried a hundred miles, more or less, in the Meurthe-et-Moselle.

* Belgium mainly uses Luxembourg ores.

1134 *Answer to Question 66.*—Transport rates, both by land and by water, bear heavily on our business in this country, because, being higher than in other countries, they deprive us of the natural advantages due to our geographical position. I have shown that no other country in the world has its ores and fuel so close together, as a whole, and if we had the same railway charges per ton-mile as other countries, our position would be immensely improved. Even as it is, railway rates are generally a smaller part of the ultimate cost of our products than is the case elsewhere, but in some inland districts, such as Staffordshire, they prejudice manufacturers in reaching their markets. **Transport Rates.**

1135 *Answer to Question 27.*—The words "average burden borne by" material for shipment are vague, but if they refer to railway and port charges, the averages may, I think, be approximately as under:—

	s.	d.	s.	d.		s.	d.	s.	d.
Scotland	1	6	to	2	0	Leeds	3	0	to 4 0
Cleveland	1	0	„	2	0	South Staffordshire ..	8	0	„ 10 0
West Coast	1	0	„	1	6	South Wales	1	0	„ 2 0
Sheffield	2	0	„	3	0				

1136 *Answer to Questions 40, 41, and 42.*—I am not in the secret of the motives that have led to amalgamations and consolidations of iron-making firms, and can only assume that they were primarily designed to put money in the pockets of their promoters, like other human schemes. But it must, to my mind, be obvious that a tariff greatly facilitates control over a home market, and if it is made high enough, may make it the monopoly of home manufacturers. This being so, a consolidation is much more likely to be able to regulate production and prices than individuals, and so to keep values steady and profits stable, the risk of having markets broken and territories invaded being thereby reduced to a minimum. **Trusts.**

1137 *Answer to Question 14.*—Trusts, kartells and bounties have each a different object and function. The trust is designed to control production and prices. The kartell, as I understand it, regulates prices only. Bounties are designed to stimulate production and develop trade, where profit might otherwise be uncertain. It seldom happens that all three co-exist. **Kartells.**

I am afraid there is some reason to believe that British commercial travelling is not so perfect as it should be, and that there is room for improvement in this matter. In out-of-the-way parts of the world, such as the South of Spain, Morocco, and Egypt, I have found the German more in evidence than the Englishman. The superiority of the German in languages is notorious. **Commercial Travelling.**

1138 15 (b).—There is, in my opinion, no doubt that tariff duties can and do exist with the highest efficiency in the conditions and economy of production. The superiority of American iron works and steel works is universally admitted, and in my contribution to the recent volume on "American Industrial Conditions and Competition" I have said a good deal as to how this superiority came about, as to its character and as to its extent, in both iron and steel works. In Germany, no one is likely to doubt that the tariff has not hindered iron and steel works from attaining the highest efficiency. When the Commission of employers and employed which, on behalf of this Association I organised in 1895 to visit and report on the leading German and Belgian works, went through those establishments, they again and again expressed surprise at the perfection of the details, some of the skilled employee members of our Commission declaring "it is wonderful; we will have to begin and learn all over again." **Effect of Duties.**

1139 15 (c).—I am only concerned to show that tariffs do not, in this trade at any rate, prevent a nation from attaining and maintaining the highest industrial efficiency. Whether tariffs contribute to that result is a much more controversial question, with which I do not propose to deal.

1140 15 (d).—The tariff policy of our competitors, by guaranteeing within large limits the monopoly of the home markets, and (what is perhaps of greater importance) keeping the home market from sudden and violent breaks, must "promote continuity of running," and this result, I take it, is part of "the general efficiency of organisation" of the industry. As a rule, business men take care to secure the utmost "efficiency of organisation" if the results can be depended on to adequately reward their efforts.

1141 In the course of his cross-examination, Mr. Jeans stated that he would like to read a reply which he had written out to the question as to whether the Free Trade policy of Great Britain had aided protectionist countries: "I cannot say that I have thought very deeply on this subject, and my reply must, therefore, be that of the man in the street, who would be likely to answer that protection by enabling the countries that practise it to control their own home markets, not only helps them in those markets, but also enables them the better to obtain a footing in our own markets without necessarily making the profits that a free trade country without such control at home would require to earn in order to do business at all. So far as the iron trade is concerned, protection has enabled the United States more quickly than they would probably otherwise have done to build up their own industry and to be independent of foreign supplies, but this result has not, so far as I can see, been affected by our free trade system." **Free Trade Policy.**

SECTION XVIII.—SUPPLEMENTARY EVIDENCE.

(A) STATEMENT SENT IN BY MR. ALEX. ARMOUR, OF WILLIAM FALLOWS & CO., LIVERPOOL.

1142 The writer having been in the iron and steel trade for over fifty years, and seen the remarkable changes which have taken place during that time, may be able to take an intelligent view of the proposals now made in regard to the new fiscal departure.

1143 The extraordinary development, which has taken place during the last 10 years in the production of the United States and Germany, has undoubtedly brought us face to face with entirely new conditions, which no doubt have **Change of Conditions.**

arrested the attention of Mr. Chamberlain and others. It should be remembered that this enormous expansion was entirely due to the high protection afforded to the manufacturers of America and Germany, but the conditions were entirely different in these two countries. The expansion in America was entirely due to the growth of population and the industrial activity consequent thereon, manifesting itself in machinery expansion and building developments in the large cities and towns. There was similar expansion in Germany, but the conditions were not at all the same. In America, almost the whole production of iron and steel was used up within their own borders, and at no time was there ever any very large quantities sent out of the country. The exports in any one year never exceeded 1,154,284 tons and the average of the last five years was 800,000 tons, out of any average production of 14,600,000 tons, or less than 6 per cent. It was different in Germany. The average annual production of the last three years was about 8,700,000 tons, but the exports averaged 3,400,000 tons or 38 per cent. of the whole production. It is a well known fact that this export trade is not carried on so much with a view to profit, but with a view of getting quit of the surplus production, which could not be sold at home. Considering the great difference which exists between the prices charged in Germany and the figures at which steel billets are sold for export, there must either be a loss on the export trade, or the price extracted from the home consumers shows an enormous profit, and it is no wonder that new capital flows into the trade so as to secure these abnormal profits. The price in Germany for steel billets is 95s. and for export 76s. per ton. That is to say, assuming there is no loss on the export price, the profit on the home trade is equal to 25 per cent. This is what protection means and similar results would follow in this country if an import duty were placed on the German steel billets so largely sent here. At present, the competition of these German bars prevents prices rising unduly in this country, but a duty of 10 per cent. would immediately have the effect either of raising the price required by Germany, in which case the manufacturers in this country would raise their prices to a similar extent, or if the foreigner had to pay the duty (as some are bold enough to say) the result would be the same; for, with such a very large quantity to export, the 76s. the Germans at present obtain, would be reduced by 7s. 6d. which would be a loss heavier than they could bear. Consequently, with reduced exports, the production of Germany would recede and prices in this country would advance, and the present buyers of steel billets would be so handicapped as to lose a great deal of the business they now obtain by their low prices.

Now let me illustrate the other side of my case as to the advantages flowing from the present system of free trade, as illustrated in the history of tinplates and galvanised steel iron during the last few years.

It is well known that, up to the year 1891, when the McKinley tariff came into operation, we had almost the entire monopoly of the tinplate trade. For many years previous to 1891, the shipments of tinplates to the United States were on a very large scale and constituted very nearly three-fourths of the whole. The full effect of the McKinley tariff was not felt for several years, as it took some time to build works in America, but in ten years the exports to the United States receded from 278,479 tons in 1892 to 65,148 in 1902. The total exports for these years were 395,580 tons and 378,263 tons respectively. As might be expected, the first effect of these changed conditions was depressing and prices which had formerly ranged between 30s. and 12s. 6d. fell until 10s. per box was reached in 1898. It should be explained, however, that a part of this great fall was due to the price of tin, which, after being about £100 per ton for several years, fell to £56 in 1896. At present, with tin £121, the price of tinplates is 11s. 6d. per box f.o.b. Wales. The present low price is undoubtedly due to the cheapness of steel, consequent on the large importation from Germany and America. It should be explained that the present export trade with the United States is only secured to us under a special arrangement (which was made as a concession to the Standard Oil Company, in the direction of free trade), by which a rebate of 99 per cent. of the duty is given on the re-exportation of canned goods. It will be manifest, therefore, that the imposition of any duty on imported steel, leading as it would to higher prices must lead to the loss of this trade, which we have now the greatest difficulty in retaining against the competition of the American manufacturer, and higher prices for tinplates would probably lead to a loss of further business, which is at present only secured by the comparative cheapness of tin cases as compared with other forms of packing. It should be noted that, owing to the cheapness of production in this country, the loss of the American business was overcome within a very short time and to-day the production is about as large as it was in the year 1892 when the shipments to the United States were 278,479 tons, the total production now being about equal to 12 million boxes of 112 lbs.

During the last 10 years, the production of galvanised sheets in this country has more than doubled, and this has been due in a large measure to the cheap steel imported into this country during the last few years. In 1893, the total exports were 166,723 tons, but in 1902 these had grown to 362,446 tons and during the same time the consumption in this country has largely increased owing to the comparative cheapness during the last few years. In 1899, the price rose to £14 10s., but to-day it is rather under £10 per ton.

Looking at the question as a whole, and comparing the conditions in this country with those of our competitors there are one or two observations which may be fitly made. First, there is the fact that, as an old country and working under old-fashioned conditions, we are handicapped when competing with America and Germany, which are comparatively new to the trade. In America, especially, the conditions existing there have been peculiarly favourable to our American cousins, and with the enterprise and genius they possess, they have undoubtedly forged ahead of the old country in some respects, and however disagreeable it may be, it is absolutely imperative upon us to follow or to imitate their methods. Already this is being done to a limited extent, and especially so in the most enterprising district of the trade, viz., Middlesbro'. We have been told by Sir Christopher Furness that he expects very shortly, with enlarged furnaces and improved rolling mills, to turn out steel at the Cargo Fleet Works under £3 5s. per ton, the present price being over £1 per ton more. This is the panacea for all our present troubles, for there is not the least doubt that a district, which has in past years produced pig iron at about 30s. per ton, can do so again if the necessity arises and that this will be necessary we entertain no manner of doubt, for there will be a great battle in the future for supremacy in the steel trade is absolutely certain.

As we have already shown, that a large portion of the exports of iron and steel are dependent on cheapness of production, it follows that any fiscal measure, whether it raises the price of food or imported material, must tend to a reduction of the volume of trade and so give less occupation to labour; but any cheapening of cost of production by improved furnaces and mills must have exactly an opposite effect and be greatly for the benefit of the working classes.

Questions Addressed to Mr. Armour and his Answers thereto.

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Question 1.—The first part of your Memorandum deals with the increase in price to the consumer in consequence of the adoption of a protective system. You point out that, whereas in Germany the price of steel billets intended for consumption in the country is 95s., the export price is only 76s., giving, as you say, a profit of 25 per cent. as the home consumption, assuming no loss to have occurred on the exported steel. *Question 2.*—In the first place, you will admit that if only 62 per cent. of the whole output is consumed at home, as you say, the profit on the whole production is not 25 per cent., but only 15½ per cent. **Profits.**

Answer.—I do not see any error in my statement. If 76s. is the cost price, there must be 19s. per ton profit on every ton sold at 95s., that is equal to 25 per cent. on cost. I did not speak of the profit on the whole production.

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Question 3.—Again, do you suggest that at 76s. the selling price of German billets in this country, the German manufacturer after paying transport expenses loses nothing? If so, at what average price do you believe German billets to have been produced?

Answer.—Seeing the very large quantities exported, I think it highly improbable there should be any great loss, as they could not afford to pay any heavy losses out of their profits.

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Question 4.—Further, is it quite fair in your opinion to say that under prevailing conditions the German consumer of steel billets is really paying more than he would pay under other conditions when none of this production was disposed of externally?

Answer.—Certainly. It is quite fair to say that the German consumer is paying more than he would pay under other conditions. First, because the high prices obtained by the syndicate from home consumers is due to the large protection against imported material, and, secondly, if you assume (as is quite possible) that the export trade is carried on at considerable loss, this is certain to be made up as far as possible out of the profits extracted from the home consumer.

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Question 5.—That is to say, if the German manufacturer had no market in which to dispose of the surplus production of his works—a portion of his trade which you yourself admit is unremunerative, and if he were to produce only 62 per cent. of his present output—the cost would be such as to enable him to sell at less than the present price, 95s.? As you are aware, increased production means increased economies in production, in consequence of more economical rate of fuel consumption, labour charges and distribution of dead charges.

Answer.—I cannot see how it is possible for a manufacturer to sell 62 per cent. of his output at less than the larger 100 per cent., for it is an axiom laid down by yourself that increased production means increased economies in production, and the converse of this must be true in the case of decreased production.

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Question 6.—Is it not moreover a fact that the effect of this cheap supply in the United Kingdom is to cause a diminished output, and hence an increased British cost, and that if the British manufacturer could have supplied this additional quantity of billets it might have meant such economies in his production, that he would have been able to supply almost as cheaply as the German, certainly more cheaply than he does at present?

Answer.—It must be the case that the large imports into the United Kingdom must affect the total production both of pig iron and billets, but the increase would be quite insufficient to enable our manufacturers to save sufficient in general charges to be equal to 7s. 6d. or 10s. per ton, which is more nearly the difference between imported and home prices of billets—5s. is not a fair figure to represent the difference.

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Question 7.—It may be said that there is no reason why the British manufacturer should not be doing this now. In your opinion could and would the present conditions have arisen except under the conjuncture of protective and free trade systems in Germany and the United Kingdom respectively. If Germany had not Great Britain's free market would not the Germans average home price probably have been higher than it is at present, while the British home price would possibly have been less?

Answer.—You have touched the crux of the whole discussion when you say, "It may be said there is no reason why the British manufacturer should only be doing this now" (viz., making as cheap as the Germans). This is most emphatically true and this is the only possible way out of our present difficulties. I cannot see how prices would have been higher in Germany and lower in England, if Germany had not had Great Britain's free market—the opposite is more likely to be true, as, without this foreign competition, English prices would be higher, and this is exactly the contention of those who want foreign competition stopped by import duties and so raise prices.

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Question 8.—In the second part of your Memorandum, you refer to the tinplate and galvanised sheet industry of this country as examples of the enormous benefits which have accrued from the free importation of cheap steel billets. But is the difference in price between British and German steel sufficient to account for the whole or any part of the development to which you point in the British trade in these articles? Would not the difference in price amounting to, say, 5s. per ton only mean on a ton of tinplates, valued at from £12 to £16, a difference of 2 per cent. on the whole cost? Remembering that the tinplate and galvanised sheet manufacturers were in general accustomed to make their own tin and sheet bars, can it in your opinion be suggested that he has on the whole derived any benefit whatever from "dumps"? **Tinplate Trade.**

Answer.—I may explain that the argument in my memoranda was that, notwithstanding the loss of so large a proportion of our trade in tinplates, we had (because of free trade) quickly recovered this lost business. This was only in part due to the cheap steel received from Germany and America, but, in the first instance, the loss of business led to lower prices and these lower prices led to increased consumption, and so trade was recovered, all of which would have been more difficult under any system which imposed a duty on imported materials.

Question 9.—Up till now, South Wales has had a monopoly in the export trade of the world in these articles. Could the difference of 2 per cent. in the cost have affected the amount of British exports to any appreciable extent?

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Answer.—This is answered very much by what has been said above, for, although it is true that up to the present we have had a virtual monopoly of the export trade of the world, still this has been due to the very low prices which have ruled and prevented America or Germany entering into competition with us. Any measure of protection such as is proposed would have the double effect not only of restricting the consumption by any advance in prices, but would also render it possible for both America and Germany—and the latter more especially—to enter into competition with us at these higher prices.

Question 10.—Do you not think that, but for the McKinley tariff, we should at the present time be supplying not only the United States, but also the rest of the world?

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Answer.—To this I emphatically reply, certainly not, for if you can suppose it possible for America to have allowed us to have this large and growing demand, prices would have become so high on this side as to make it possible for them easily to meet our competition and in fact our only chance for retaining this trade is by producing tinplates at a price which no other country can touch. The same remarks apply even more strongly to the trade in galvanised sheets, as it has been more benefited than any other trade by the free importations of foreign steel and the price to-day makes it impossible for any other country to enter into competition with us.

(B) REPORT OF THE FORGE TRADE ASSOCIATION OF GREAT BRITAIN.

The following is a summary of the Report issued by the Forge Trade Association of Great Britain in April last and kindly placed at the disposal of the Tariff Commission. It contains the results of a special inquiry instituted by the Association. The returns apply to 48 manufacturers out of a total of 63 who were invited to furnish particulars. The replies were sent to Mr. R. Smith, chartered accountant, of Newcastle-on-Tyne, who tabulated and summarised the results, and reported thereon.

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The report states that, in reply to a question on Foreign Competition, there was "practical unanimity in the statement that foreign makers supply to customers in this country forgings, and particularly mercantile marine shafting, at prices below the British cost of production. It is even alleged" by one firm "that 'the prices at which forgings are being delivered in this country from Germany would not cover the cost of wages and material'; and" by another firm, "in some items of our manufacture we find if we take off every penny of labour from our costs they still remain above the price that the Germans are delivering in the North-east Coast."

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It is stated that since 1898, nine forges have been actually closed, and that this number will probably be augmented if the present low prices continue.

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The suggested remedy to meet this competition is in the direction of an imposition of a duty upon the importations of forgings.

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The following is a summary of the statistical tables appended to the Forge Trade Association's report.—

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		1898.	1899.	1900.	1901.	1902.	1903.
1. Forged weight of shafting and engine forgings for mercantile marine engines.	Tons	29,331	30,820	24,130	26,525	21,009	17,233
	Per cent.	100	105	82	90	72	59
2. Forged weight of forgings of all descriptions.*	Tons.	59,686	65,011	62,355	61,457	52,390	52,572
	Per cent.	100	109	104	103	88	88
3. Wages paid to forge employees.†	£	241,915	266,176	253,480	253,990	213,463	199,246
	Per cent.	100	110	105	105	88	82
4. Number of forge department employees.	No.	3,017	3,176	3,058	2,969	2,609	2,370
	Per cent.	100	105	101	98	87	79
5. Invoiced weights of forged stern frames and rudder frames for mercantile marine.	Tons.	3,986	3,706	3,356	3,752	2,918	3,141
	Per cent.	100	93	84	94	73	79

* Except drop forgings and railway arches.

† Except office staff.

(C) ADDITIONAL STATEMENTS BY MANUFACTURERS.

A considerable amount of material relating to profits, costs of production, estimates of effects on these costs of working full, three-quarters and half-time, purchases of dumped goods, quotations from foreign makers, &c., has been sent to us in confidence. As a large proportion of this material could not be published without at the same time disclosing the source of the information it has been necessary to omit it.

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The following extracts are typical of the ground covered by this information.

(1) Continuous Running.

FIRM No. 682.

It is evident that if we have sufficient work to keep our machinery running night and day, we get double the quantity of work with the same amount of capital outlay; in the case of an article like wire, where the largeness or smallness of the quantity produced greatly affects the value it is a matter of the utmost importance.

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1165 FIRM No. 785.

If our rolling mill and foundries work four days a week instead of six, the cost is increased 2s. 6d. a ton. If three days a week instead of six, 5s. a ton. This is due to the fact that the standing charges remain the same for a small output as for a large.

Continuous Running
—continued.

1166 FIRM No. 834.

Cost of production is enormously increased when running short time.

1167 FIRM No. 849.

We may say that our cost of production is frequently doubled by this, and we have known it to be more than trebled. Cost of manufacturing in our business is increased by fully 10 per cent. when on three-quarter time.

1168 FIRM No. 1,046.

With regard to increased cost of production by short time as distinct from continuous running, the main part of our wages are for piece work, but there are certain dead charges which vary considerably according to the output. In our case these charges, which should be about 6s. per pair of wheels and axle, rise to 12s. and even more when we are not fully occupied.

1169 FIRM No. 1,200.

With regard to cost of production, this is increased 10 to 20 per cent. owing to the extra cost of fuel and generating steam, &c., for say, three or four days per week, and in addition various general charges are not reduced in accordance with the time worked.

1170 FIRM No. 1,467.

On the matter of running a portion of our plant only, as distinct from continuous running, in the production of pig iron and in the production of all kinds of iron and steel, this is a most important point. Our pig iron plants consists of three blast furnaces, taking these, as separate units, we find that to stop running one of them increases our cost of production per ton 4 per cent.; to put out a second one, leaving only one unit in operation, increases our cost 8 per cent. This is in labour and fixed charges.

1171 FIRM No. 1,526.

It will be obvious that in the manufacture of sectional steel, frequent changing of the rolls, in order to cover a wide range of sections, adds considerably to the cost of production, both by reason of the actual labour involved and by curtailment of the output while the mill is standing. Given a good order book a rolling mill can continue working for several days on one section and thus make a large output and reduce costs to the lowest point. With this object in view, we, in common with other British manufacturers, agreed some time ago to the standardisation of sections, which, it is hoped, will soon be universally adopted by consumers throughout the British Empire.

1172 FIRM No. 1,534.

We reckon our loss through broken or short time compared with full time about 2s. 6d. per ton.

(2) Preferential Freights.

1173 FIRM No. 1,932.

With reference to the scarcity of export orders to Australia, you may not be aware (but it is nevertheless a fact) that many importers in our Colonies are actually asking their agents to buy from abroad simply to save freightage. To-day rates are quoted Antwerp to Australia 28s. per ton, London to Australia (same ports) 45s. per ton.

The Antwerp stuff is sent over by the General Steam Navigation Company and lightered alongside the same ship. The United Kingdom manufacturer cannot compete when he must start £1 per ton under the foreigners' prices.

Preferential Freights.

The following is a copy of comparative rates—United States of America, South Africa and the United Kingdom and United Kingdom and South Africa, which list was issued 27th March, 1903:—

To	Class I.		Class II.		Class III.		Class IV.	
	U. K.— S. Africa.	New York— S. Africa.	U. K.— S. Africa.	New York— S. Africa.	U. K.— S. Africa.	New York— S. Africa.	U. K.— S. Africa.	New York— S. Africa.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Cape Town and Algoa Bay	42 6	15 0	31 3	15 0	25 0	15 0	22 6	15 0
Mossel Bay ..	47 6	—	36 3	—	30 0	—	27 6	—
East London (including lighterage) ..	48 9	17 6	38 9	17 6	32 6	17 6	30 0	17 6
Natal (including landing) ..	52 6	17 6	40 0	17 6	32 6	17 6	30 0	17 6
Delagoa Bay (including lighterage)	48 9	25 0	42 6	25 0	35 0	25 0	32 6	25 0

FIRM No. 265.

German and Belgian chain iron bars and steel bedstead angles have been, for some time past, sold in this district some shillings per ton under the cost price of English iron and steel made on the spot.

FIRM No. C 543.

The tinplate trade here suffers more from the dumping of iron and steel than in any other part of the country. This can be corroborated by the Board of Trade statistics.

FIRM No. 619.

The prices at which some wheels sent from the United States have been offered in this country were never clearly revealed to us, but we were justified in believing that they were to be purchased at the highest price offered for them. This "dumping," however, we must say, in our particular industry, has never been serious.

FIRM No. 630.

American file makers offer their files to consumers here at 70 per cent. from the Sheffield Standard List. I have heard of American files being offered here at 72½ per cent. from the Sheffield Standard List.

FIRM No. 692.

The following is a copy of the terms of sale attached to a quotation for steel sheets sent by a German firm to a British manufacturer :—

TERMS OF SALE.

Our offers are always understood for basic steel sheets of ordinary Thomas merchant quality, unless the enquiries and our offers have been for another quality.

It is understood that the sheets offered by us are for direct exportation only to the United Kingdom or extra European countries and are not allowed to be re-imported into Germany ; in the event of any dispute arising on this point, the buyer would have it necessary to prove that he has acted in accordance with this clause. If goods the are required for the European Continent, we shall be pleased to quote special prices on receipt of particulars.

Prices are understood in complete truck loads of 10 tons.

Parcels under 10 tons must await opportunity of despatch with other goods to make a truck load, unless buyers prefer to pay the extra carriage.

For special qualities as well as for inspection and approval of the material the price has to be agreed upon.

In case specifications given by the buyers exceed the total quantity booked, we are only bound to supply up to the quantity contracted for, and we are consequently entitled to invoice the excess quantity specified and delivered at current prices of the day.

Deliveries are made for account and risk of the buyer, even if the material has been sold delivered

In all cases where no clear instructions as to forwarding are given, we will act to the best of our ability, and in the interests of our clients, without, however, taking any responsibility whatever in the matter.

Indemnities of any sort or other claims are absolutely declined.

Offers which have been made delivered or free on board are to be understood in such manner that the price named includes the freight and railway carriage respectively, and that the latter only represents an advance made by the works for account of the buyer.

No guarantee is undertaken as to prompt delivery on the part of the railway company.

If we have to deliver the materials free on board, the necessary room has to be provided for, and the goods must be promptly disposed of on their arrival at the shipping port, otherwise storage will be effected for account and risk of the client, and the latter has to pay for the material in accordance with the terms of the contract.

In case of strikes, want of raw material in consequence of non-delivery of quantities contracted for, mobilisation, war, want of railway trucks, accidents to machinery, and unforeseen circumstances causing the stopping of our mills, the works reserve to themselves the right to cancel or suspend deliveries contracted for.

Final inspection must take place at works, and if it is dispensed with by the buyers, the goods must be looked upon as having been accepted by them, as we cannot entertain any claim for quality, &c., after the goods have left the works. In the same way we cannot allow any claims for short weight, while every facility will be given buyers to have the invoiced weights checked at port of shipment.

The time of deliveries mentioned in our offers must be taken as approximate, and we cannot be held to make good any claims resulting from late delivery or failure to ship by a certain steamer designated by the buyers, although it will always be our best endeavours to meet their wishes in this respect.

The Association has the option to have the order executed by another work than that originally designated. As for the rest, we beg to refer to the general and special sale conditions contained in our price list.

FIRM No. 834.

We have intimated to German and American firms that we use only British made wire, but still they call from time to time offering to supply us at a price which we know, and they admit to be, below cost. United States firms only do this when it suits them, that is, when their home trade is quiet, orders then are wanted, and price is a secondary consideration.

FIRM No. C 895.

Previous to the sale of large quantities of German and American tin bars in October last, at 10s. per ton below the prices of local works, I found a ready sale for our material. But immediately the above contracts were made, the local steel bar makers were unable to take our material except at a substantial drop of from 5s. to 6s. per ton, and even then only in reduced quantities. It is obvious that this dumping of bars is the cause of very serious loss to us and of no general advantage to the tinplate manufacturers as the consequent depreciation in value of stocks of manufactured tinplates, shearings, &c., would go far to equalise the advantage gained by the recent purchases of foreign bars at the reduced prices.

FIRM No. 998.

The difference in value between English and Foreign steel which we gave you, is not constant, but varies in accordance with the state of the trade. If the foreigners are hard up for home orders, they flood the English market with material considerably under cost price.

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1182 FIRM No. 1058.

"Early in November, 1903, Belgian iron, suitable for bolts, Nuts, Rivets, was quoted £4 10s. per ton net, f.o.b. Antwerp, which, with carriage to ————, or, ————, say, 14s. 9d. per ton, was £5 13s. 9d. per ton net d-d at those stations. At the same time, fairly good ———— bars, made in this district, could not be produced under £6 2s. 6d. per ton, less 2½ per cent. discount, or say, £5 19s. 5d. per ton net. This, you will see, means that we were beaten to the extent of 5s. 8d. per ton. Comparing the cost of production of bar iron with continuous running, we find an increased cost of at least 2s. per ton when working short time, which, with the competition we have referred to, would finally mean closing the works."

1183 FIRM No. 1,185.

In reply to your communication, we beg to state that our keenest competition appears to come from Germany in particular, and, in the case of cold rolled thin steel, there are instances of 20 per cent. difference between our cost of production and the selling price at or near London, of the German finished steel, i.e., where our quotations have been based on a price of £18 per ton at our works, we have come across German quotations for similar steel, delivered in London, at £14 10s. to £15 per ton.

On the other hand, in the hardened and tempered busk steel trade, we are undersold in London and Birmingham to the extent of £2 per ton on a basis price of £17.

Independent of the above wide discrepancy in prices, there is still the carriage rate between here and London to be considered, because, whereas the German firms are able to import goods into London for a matter of 10s. per ton, the railway rate from Sheffield to London is equal to 20s. per ton for the same class of goods.

You will see, therefore, that in some cases, we are altogether undersold both as to manufacture and freights.

1184 FIRM No. 1,200.

We give you below prices which we believe are obtained in this country, along with the British prices of the various imported materials named. We believe the home prices in the foreign country are about 50 per cent. in excess of those obtained in this country.

		Foreign Price.		British Prices.
		per ton.		per ton.
Wagon Tyres ..	..	£6 4 6		£7 10 0
Axles, rough-turned ..	..	6 12 6		7 15 0
Forgings, rough-turned ..	..	12 10 0		14 0 0
Billets ..	..	4 0 0		4 0 0
American Billets ..	..	4 0 0		6 5 0

1185 FIRM No. 1,307.

It can safely be concluded, from figures which are of common knowledge, that the most favourably situated German works export to the United Kingdom at about cost price, and those works less favourably situated, at a loss.

1186 FIRM No. 1,359.

We have documentary evidence of the following list of prices. Our prices are the lowest we can quote, and are little, if any, above the cost of production.

Specification.	Continental Price.	Our Price.
¾ in. by 22 in. gauge steel hoops	£7 0 0	£10 0 0
00 in. by 22 in. gauge steel hoops	8 15 0	17 0 0
¾ in. by 12 in. and 14 in. gauge steel hoops..	5 18 0	9 0 0
¾ in. by 20 in., ¾ in. by 19 in., 1 in. by 19 in., 1½ in. by 18 in., 1½ in. by 18 in., 1½ in. by 17 in. ..	6 10 0	7 15 0
00 in., ¾ in., and 00 in. round ..	6 17 6	8 7 0

All delivered f.o.b. Hull, except in the case of the Antwerp specification

1187 FIRM No. 1,432.

We hear frequently of shipbuilders being able to place orders in Germany for ships' castings, machined complete, and including delivery, at about 20s. or 21s., and the cost of production of such manufactures in this country is at least 20 per cent. more. We understand that German shafting, rough-turned, is being delivered on the Clyde at about 11s. to 11s. 6d., and the cost of production of such work to the British manufacturer is at least 20 per cent. to 25 per cent. higher than this.

1188 FIRM No. 1,510 and 1,511.

The dumping of German, American and other foreign steel in this country has had nothing whatever to do in promoting the recent expansion of the tinplate trade. It will be seen that last year the export of tinplates fell off as compared with 1902; the figures being 293,147 tons in 1903, and 312,206 tons in 1902, which shows a large falling off from the exports of 1891 which were 338,379 tons.

1189 FIRM No. 1,526.

We understand that iron tube strips have been sold in this country at 12s. 6d. per ton less than our lowest selling price. Our position regarding cost of production is that it is increased from 2s. to 10s. per ton by short time as distinct from continuous running, and we consider that during the past three years it has been 5s. per ton more than it would have been, had our works been on full time.

We regret we are not in a position to say definitely what difference exists between the relative costs of production at home and abroad, but we are informed that one chief cause is the greatly lower rate of wages ruling on the continent.

We find from price lists issued by Continental Firms or their agents in this country, foreign steel joists have for several years past invariably been sold in Great Britain, delivered at important centres of distribution including London, Liverpool, Birmingham, Manchester and Glasgow, at prices varying from 10s. to 35s. per ton below the selling price of British makers. The prices delivered to Liverpool, London, Manchester, &c., are based on quotations f.o.b. Antwerp with the approximate carriage rates added. We have no reliable information as to the cost of production in Germany or Belgium, but the delivered prices of imported joists given in the following table range from 5s. to 20s. per ton below the cost price at makers' works in this country.

The following table gives the comparative prices of English and Continental steel joists, 1901-1904, at the several points of delivery mentioned:—

Date	f.o.b. Antwerp.		London.		Liverpool.		Glasgow.		Manchester.		Birmingham.	
1901.	Foreign.	British.	Foreign.	British.	Foreign.	British.	Foreign.	British.	Foreign.	British.	Foreign.	British.
May	4 15 0	—	5 0 0	6 7 0	5 2 0	6 9 0	5 2 6	6 7 0	5 9 0	6 9 0	5 11 0	6 9 6
July	4 7 9	—	4 12 9	6 7 0	4 14 9	6 9 0	4 15 3	6 7 0	5 1 9	6 9 0	5 3 9	6 9 6
Nov.	4 3 9	—	4 3 9	6 4 6	4 10 9	6 6 6	4 11 3	6 4 6	4 17 9	6 6 6	4 19 9	6 7 0
1902.												
Jan.	4 6 6	—	4 11 6	6 4 6	4 13 6	6 6 6	4 14 0	6 4 6	5 0 6	6 6 6	5 2 6	6 7 0
May	4 15 6	—	5 0 6	6 2 0	5 2 6	6 4 0	5 3 0	6 2 0	5 9 6	6 4 0	5 11 6	6 4 6
Dec.	4 7 0	—	4 12 0	5 19 9	4 14 0	6 1 9	4 14 6	5 19 9	5 1 0	6 1 9	5 3 0	6 2 3
1903.												
June	4 8 6	—	4 13 6	5 14 9	4 15 6	5 16 9	4 16 0	5 14 9	5 2 6	5 14 9	5 4 6	5 17 3
Oct.	4 5 9	—	4 10 0	5 14 9	4 12 9	5 16 9	4 13 3	5 14 9	4 19 9	5 14 9	5 1 9	5 17 3
April	4 6 0	—	4 11 0	5 7 6	4 13 0	5 9 6	4 13 6	5 7 6	5 0 0	5 7 6	5 2 0	5 10 0

FIRM No. 1,534.

The difference between the price of Continental tube strips, and local tube strips, we believe runs from 10s. to 15s. per ton. We may quote a specific case in December last, where a large quantity of shorn strips were wanted by local tube makers here, who were quoted a price for Continental strips 12s. 6d. per ton below our prices here. The strip makers met and resolved to take this order amongst them, in competition with Germany, at the German price of £6 10s. per ton net. We took our share, on which we reckoned we lost about 7s.6d. per ton.

FIRM No. C 1,637.

The following is a copy of a letter received by a London firm of engineers from the agent of a foreign firm:—

Dear Sirs,

May 24th, 1904.

We herewith enclose list of nails we have at wharf and shall be glad to receive particulars of your requirements, when we will at once send you our very best prices.

We also enclose list of nails (B). at wharf, for which we are prepared to accept exceptionally low prices, and would be willing to consider reasonable offers for same.

Trusting to hear shortly from you,
per pro (Signed) ———

List (B) states as follows:—

We are prepared to accept prices *below cost* for the following:—

Round wire nails.	Blued wire slate.	Panel pins.
Square nails.	Bright wire slate.	Cigar box nails.
Oval wire brads.	Bright wire staples.	Steel wire, bright.
Wire tram nails.	Lath nails.	Steel wire, galvanised.
Blued ovals.	Shoe rivets.	Bar iron No. 3 quality.
Dowells.	Japanned nails.	

The list gives a number of dimensions, &c., under each heading.

FIRM No. 1,778.

We purchased from the continent steel castings, ingot steel tunnel shafting, and crank shaft parts, all of excellent quality, and at much lower prices than we can make them ourselves, or buy them from United Kingdom makers. We are convinced the prices are much lower than the actual cost of manufacture in the countries from which the goods are sent.

The following list of home and export prices in GERMANY is taken from the *Iron and Coal Trades Review* (May 13th, 1904).

	Export (f.o.b.)	Home (f.o.r.)
Billets	76s.	94s.
Sheet bars	77s.	97s.
Rails, 50 lbs. up	90s.	121s.
Basic bars	107s. to 112s.	113s.
Joists	85s.	105s.
Plates, ship	109s. to 111s.	111s. to 113s.
Angles	107s. to 112s.	112s. to 115s.
Drawn Wire, No. 8	125s.	—
Galvanized	150s.	—

END OF VOL. I.

THE TARIFF COMMISSION,

7, VICTORIA STREET, WESTMINSTER, S.W.

21st July, 1904.

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